

TECHNICAL MANUAL

USAF TECHNICAL ORDER NUMBERING SYSTEM

Prepared By: Automated Technical Order System (ATOS)

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Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title	1	27-1 - 27-5	0		
A	1	27-6 Blank	0		
i - vi	0	28-1 - 28-3	0		
1-1 - 1-14	0	28-4 Blank	0		
2-1 - 2-2	0	29-1 - 29-2	0		
3-1 - 3-2	0	30-1	0		
4-1 - 4-7	0	30-2 Blank	0		
4-8 Blank	0	31-1 - 31-2	0		
5-1 - 5-4	0	32-1 - 32-2	0		
6-1 - 6-3	0	33-1 - 33-2	0		
6-4 Blank	0	34-1	0		
7-1 - 7-3	0	34-2 - 34-7	1		
7-4 Blank	0	34-8 Blank	1		
8-1 - 8-7	0	35-1 - 35-2	0		
8-8 Blank	0	36-1 - 36-2	0		
9-1 - 9-4	0	37-1 - 37-2	0		
10-1 - 10-2	0	38-1	0		
11-1 - 11-8	0	38-2 Blank	0		
12-1 - 12-3	0	39-1 - 39-2	0		
12-4 Blank	0	40-1 - 40-2	0		
13-1 - 13-4	0	41-1 - 41-3	0		
14-1 - 14-13	0	41-4 Blank	0		
14-14 Blank	0	42-1 - 42-44	0		
15-1 - 15-2	0				
15-3	1				
15-4 Blank	1				
16-1 - 16-3	0				
16-4 Blank	0				
17-1 - 17-2	0				
18-1 - 18-4	0				
19-1 - 19-3	0				
19-4 Blank	0				
20-1 - 20-3	0				
20-4 Blank	0				
21-1	0				
21-2 Blank	0				
22-1 - 22-5	0				
22-6 Blank	0				
23-1 - 23-3	0				
23-4 Blank	0				
24-1 - 24-10	0				
25-1 - 25-3	0				
25-4 Blank	0				
26-1 - 26-8	0				

*Zero in this column indicates an original page

TABLE OF CONTENTS

Chapter/Para	Page
1 INTRODUCTION.....	1-1
1-1 Purpose and Scope.....	1-1
1-2 References	1-1
1-3 Responsibilities	1-1
1-4 General	1-2
1-5 Technical Order Management Information Systems.....	1-3
1-6 Technical Order Numbering Theory	1-3
1-7 Technical Order Numbering Procedures	1-4
1-8 Identifying Types of Technical Orders.....	1-4
1-9 Numbering Related Technical Orders	1-5
1-10 Numbering Functionally Oriented Maintenance Manuals	1-6
1-11 Numbering Maintenance Dependency Charts	1-6
1-12 Numbering Calibration and Measurement Summaries Technical Orders	1-6
1-13 Numbering Combined Types of Technical Orders	1-6
1-14 Numbering Sectionalized Technical Orders.....	1-6
1-15 Numbering Technical Order Supplements, Changes, and Page Supplements	1-6
1-16 Numbering Abbreviated Technical Orders.....	1-7
1-17 Numbering Supplemental Manuals.....	1-7
1-18 Numbering Time Compliance Technical Orders.....	1-7
1-19 Emergency Technical Order Numbering Requests.....	1-8
1-20 Renumbering.....	1-8
1-21 Assigning TO Numbers to Army Technical Manuals.....	1-8
1-22 General Technical Orders.....	1-9
1-23 Joint Electronics Type Designation System (JETDS) General Technical Orders	1-10
1-24 Country Standard Technical Order Numbers.....	1-10
1-25 Operation and Maintenance Instructions in Work Package Format	1-12
1-26 TOs Available on Multiple Media	1-13
1-27 Distribution Media Containing Multiple TOs.....	1-13
1-28 Commercial Manuals	1-14
2 CATEGORY 0 - NUMERICAL INDEX, ALPHABETICAL INDEX AND CROSS-REFERENCE TABLES	2-1
2-1 General.....	2-1
2-2 Numbering Patterns.....	2-1
2-3 Examples of the Category 0 Numbering Patterns.....	2-2
2-4 Category 0 Numbering Series	2-2
3 CATEGORY 00 - GENERAL TECHNICAL ORDERS	3-1
3-1 General.....	3-1
3-2 Numbering Patterns.....	3-1
3-3 Examples of Technical Order Numbering Patterns in Category 00.....	3-1
3-4 Listing of Category 00 Numbering Series	3-1
4 CATEGORY 1 - AIRCRAFT.....	4-1
4-1 General.....	4-1
4-2 Numbering Patterns.....	4-1
4-3 Examples of Numbering Patterns.....	4-3
4-4 Military Specification MIL-PRF-83495 Maintenance Manuals.....	4-4
4-5 Examples of Numbering Patterns for MIL-PRF-83495 Manuals	4-6

TABLE OF CONTENTS - Continued

Chapter/Para	Page
5 CATEGORY 2 - AIRBORNE ENGINES AND ASSOCIATED EQUIPMENT	5-1
5-1 General.....	5-1
5-2 Numbering Patterns.....	5-1
5-3 Category 2 Numbering Patterns	5-2
5-4 Category 2 Numbering Indicators.....	5-3
6 CATEGORY 3 - AIRCRAFT PROPELLERS AND ROTORS	6-1
6-1 General.....	6-1
6-2 Numbering Patterns.....	6-1
6-3 Examples of Category 3 Numbering Patterns	6-1
6-4 Category 3 Technical Order Numbering Series	6-2
7 CATEGORY 4 - AIRCRAFT LANDING GEAR.....	7-1
7-1 General.....	7-1
7-2 Numbering Patterns.....	7-1
7-3 Examples of Category 4 Technical Order Numbering Patterns	7-2
7-4 Category 4 TO Numbering Series.....	7-2
8 CATEGORY 5 - AIRBORNE INSTRUMENTS.....	8-1
8-1 General.....	8-1
8-2 Numbering Patterns.....	8-1
8-3 Examples of Category 5 Numbering Patterns	8-2
8-4 Category 5 Numbering Series	8-2
9 CATEGORY 6 - AIRCRAFT AND MISSILE FUEL SYSTEMS.....	9-1
9-1 General.....	9-1
9-2 Numbering Patterns.....	9-1
9-3 Examples of Category 6 Numbering Patterns	9-2
9-4 Category 6 Numbering Series	9-2
10 CATEGORY 7 - AIRBORNE ENGINE LUBRICATING SYSTEMS.....	10-1
10-1 General.....	10-1
10-2 Numbering Pattern	10-1
10-3 Examples of Category 7 Numbering Patterns	10-1
10-4 Category 7 Numbering Series	10-2
11 CATEGORY 8 - AIRBORNE ELECTRICAL SYSTEMS.....	11-1
11-1 General.....	11-1
11-2 Numbering Patterns.....	11-1
11-3 Examples of Category 8 Numbering Patterns	11-1
11-4 Category 8 Numbering Series	11-2
12 CATEGORY 9 - AIRCRAFT AND MISSILE HYDRAULIC, PNEUMATIC AND VACUUM SYSTEMS.....	12-1
12-1 General.....	12-1
12-2 Numbering Patterns.....	12-1
12-3 Examples of Category 9 Numbering Patterns	12-1
12-4 Category 9 Numbering Series	12-2
13 CATEGORY 10 - PHOTOGRAPHIC EQUIPMENT.....	13-1
13-1 General.....	13-1
13-2 Numbering Patterns.....	13-1
13-3 Examples of Category 10 Numbering Patterns	13-2
13-4 Category 10 Numbering Series	13-2

TABLE OF CONTENTS - Continued

Chapter/Para		Page
14	CATEGORY 11 - ARMAMENT EQUIPMENT	14-1
14-1	General	14-1
14-2	Numbering Patterns	14-1
14-3	Examples of Category 11 Numbering Patterns	14-2
14-4	Category 11 Numbering Series	14-2
15	CATEGORY 12 - AIRBORNE ELECTRONIC EQUIPMENT	15-1
15-1	General	15-1
15-2	Numbering Patterns	15-1
15-3	Examples of Category 12 Numbering Patterns	15-2
15-4	Category 12 Numbering Series	15-2
16	CATEGORY 13 - AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING EQUIPMENT, CARGO LOADING, AERIAL DELIVERY AND RECOVERY EQUIPMENT, AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT	16-1
16-1	General	16-1
16-2	Numbering Patterns	16-1
16-3	Examples of Category 13 Numbering Patterns	16-2
16-4	Category 13 Numbering Series	16-2
17	CATEGORY 14 - DECELERATION DEVICES, PERSONAL AND SURVIVAL EQUIPMENT	17-1
17-1	General	17-1
17-2	Numbering Patterns	17-1
17-3	Examples of Category 14 Numbering Patterns	17-1
17-4	Category 14 Numbering Series	17-2
18	CATEGORY 15 - AIRCRAFT AND MISSILE TEMPERATURE CONTROL, PRESSURIZING, AIR-CONDITIONING, HEATING, ICE ELIMINATING AND OXYGEN EQUIPMENT	18-1
18-1	General	18-1
18-2	Numbering Patterns	18-1
18-3	Examples of Category 15 Numbering Patterns	18-2
18-4	Category 15 Numbering Series	18-2
19	CATEGORY 16 - AIRBORNE MECHANICAL EQUIPMENT	19-1
19-1	General	19-1
19-2	Numbering Patterns	19-1
19-3	Examples of Category 16 Numbering Patterns	19-1
19-4	Category 16 Numbering Series	19-2
20	CATEGORY 21 - GUIDED MISSILES	20-1
20-1	General	20-1
20-2	Numbering Patterns	20-1
20-3	Examples of Category 21 Numbering Patterns	20-2
20-4	Shortened Numbering for Missile Technical Order Manuals	20-3
21	CATEGORY 22 - AEROSPACE VEHICLES	21-1
21-1	General	21-1
21-2	Numbering Patterns	21-1
21-3	Examples of Category 22 Numbering Patterns	21-1
22	CATEGORY 31 - GROUND ELECTRONIC EQUIPMENT	22-1
22-1	General	22-1

TABLE OF CONTENTS - Continued

Chapter/Para		Page
	22-2 Numbering Patterns.....	22-1
	22-3 Examples of Category 31 Numbering Patterns	22-2
	22-4 Category 31 Numbering Series	22-3
23	CATEGORY 32 - STANDARD AND SPECIAL TOOLS	23-1
	23-1 General.....	23-1
	23-2 Numbering Patterns.....	23-1
	23-3 Examples of Category 32 Numbering Patterns	23-1
	23-4 Category 32 Numbering Series	23-2
24	CATEGORY 33 - TEST EQUIPMENT.....	24-1
	24-1 General.....	24-1
	24-2 Numbering Patterns.....	24-1
	24-3 Examples of Category 33 Numbering Patterns	24-2
	24-4 Category 33 Numbering Series	24-2
25	CATEGORY 34 - SHOP MACHINERY AND SHOP SUPPORT EQUIPMENT	25-1
	25-1 General.....	25-1
	25-2 Numbering Patterns.....	25-1
	25-3 Examples of Category 34 Numbering Patterns	25-2
	25-4 Category 34 Numbering Series	25-2
26	CATEGORY 35 - GROUND HANDLING, SUPPORT, AIR AND MISSILE BASE OPERATING EQUIPMENT	26-1
	26-1 General.....	26-1
	26-2 Numbering Patterns.....	26-1
	26-3 Examples of Category 35 TO Numbering Patterns	26-2
	26-4 Category 35 Numbering Series	26-2
27	CATEGORY 36 - VEHICLES, CONSTRUCTION AND MATERIAL-HANDLING EQUIPMENT	27-1
	27-1 General.....	27-1
	27-2 Numbering Patterns.....	27-1
	27-3 Examples of Category 36 Numbering Patterns	27-2
	27-4 Category 36 Numbering Patterns	27-2
28	CATEGORY 37 - FUEL-, OIL- AND PROPELLANT-HANDLING EQUIPMENT	28-1
	28-1 General.....	28-1
	28-2 Numbering Patterns.....	28-1
	28-3 Examples of Category 37 Numbering Patterns	28-1
	28-4 Category 37 Numbering Series	28-2
29	CATEGORY 38 - NONAERONAUTICAL ENGINES	29-1
	29-1 General.....	29-1
	29-2 Numbering Patterns.....	29-1
	29-3 Examples of Category 38 Numbering Patterns	29-1
	29-4 Category 38 Numbering Series	29-2
30	CATEGORY 39 - WATERCRAFT EQUIPMENT	30-1
	30-1 GENERAL.....	30-1
	30-2 Numbering Patterns.....	30-1
	30-3 Examples of Numbering Patterns Used In Category 39.....	30-1
	30-4 Category 39 Numbering Series	30-1

TABLE OF CONTENTS - Continued

Chapter/Para		Page
31	CATEGORY 40 - COMMERCIAL AIR-CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING AND WATER TREATING EQUIPMENT	31-1
31-1	General.....	31-1
31-2	Numbering Patterns.....	31-1
31-3	Examples of Category 40 Numbering Patterns	31-1
31-4	Category 40 Numbering Series	31-2
32	CATEGORY 41 - SUBSISTENCE AND FOOD SERVICE EQUIPMENT	32-1
32-1	General.....	32-1
32-2	Numbering Patterns.....	32-1
32-3	Examples of Category 41 Numbering Patterns	32-1
32-4	Category 41 Numbering Series	32-2
33	CATEGORY 42 - COATING, CLEANING AND SEALING COMPOUNDS AND FUELS, GASES, LUBRICANTS, CHEMICALS AND MATERIALS	33-1
33-1	General.....	33-1
33-2	Numbering Patterns.....	33-1
33-3	Examples of Category 42 Numbering Patterns	33-2
33-4	Category 42 Numbering Series	33-2
34	CATEGORY 43 - SIMULATOR AND TRAINING DEVICES	34-1
34-1	General.....	34-1
34-2	Numbering Patterns.....	34-1
34-3	Examples of Category 43 Numbering Patterns	34-2
34-4	Category 43 Numbering Series	34-2
35	CATEGORY 44 - COMMON HARDWARE EQUIPMENT	35-1
35-1	General.....	35-1
35-2	Numbering Patterns.....	35-1
35-3	Examples of Category 44 Numbering Patterns	35-1
35-4	Category 44 Numbering Series	35-2
36	CATEGORY 45 - RAILROAD EQUIPMENT.....	36-1
36-1	General.....	36-1
36-2	Numbering Patterns.....	36-1
36-3	Examples of Category 45 Numbering Patterns	36-1
36-4	Category 45 Numbering Series	36-2
37	CATEGORY 46 - OFFICE, DUPLICATING, PRINTING AND BINDING EQUIPMENT	37-1
37-1	General.....	37-1
37-2	Numbering Patterns.....	37-1
37-3	Examples of Category 46 Numbering Patterns	37-1
37-4	Category 46 Numbering Series	37-2
38	CATEGORY 47 - AGRICULTURE EQUIPMENT	38-1
38-1	General.....	38-1
38-2	Numbering Patterns.....	38-1
38-3	Example of Category 47 Numbering Patterns	38-1
38-4	Category 47 Numbering Series	38-1
39	CATEGORY 49 - OPTICAL INSTRUMENTS, TIMEKEEPING AND NAVIGATION EQUIPMENT	39-1
39-1	General.....	39-1

TABLE OF CONTENTS - Continued

Chapter/Para		Page
	39-2 Numbering Patterns.....	39-1
	39-3 Examples of Category 49 Numbering Patterns	39-1
	39-4 Category 49 Numbering Series	39-1
40	CATEGORY 50 - SPECIAL SERVICES EQUIPMENT	40-1
	40-1 General.....	40-1
	40-2 Numbering Patterns.....	40-1
	40-3 Examples of Category 50 Numbering Patterns	40-1
	40-4 Category 50 Numbering Series	40-2
41	CATEGORY 51 - AUTOMATIC TEST SYSTEMS	41-1
	41-1 General.....	41-1
	41-2 Numbering Patterns.....	41-1
	41-3 Examples of Category 51 Numbering Patterns	41-2
	41-4 Category 51 Numbering Series	41-2
42	ALPHABETICAL LIST OF EQUIPMENT NAMES TO TECHNICAL ORDER NUMBER GROUPS.....	42-1

CHAPTER 1

INTRODUCTION

1-1 PURPOSE AND SCOPE.

1-1.1 This technical order (TO) describes the procedures and techniques employed to assign TO numbers to technical data used to operate, install, maintain, inspect, perform procedural functions on, and modify Air Force weapons systems and equipment. Numbering techniques are not included in this TO for TO numbering assignments made according to waivers or deviations from established procedures.

1-1.2 Chapter 42 of this TO provides an alphabetical listing of equipment names cross-referenced to appropriate TO number groups as they appear in individual TO indexes. Basic names of equipment systems and components are in bold print. Variations or breakdowns of the equipment follow in small print. This listing does not indicate the status of individual publications. The only authorized source for determining the status and availability of individual publications is the appropriate TO index.

1-1.3 Recommendations or suggestions concerning this document should be submitted by letter to OC-ALC/TILUB, Tinker AFB OK 73145-5979.

1-2 REFERENCES.

Directives identified below provide policy, guidance and references used to make TO number assignments to approved TO data.

1-2.1 AFM 67-1, Volume 9, Security Assistance Program Procedures.

1-2.2 AFRPD 21-3, Technical Orders.

1-2.3 AFMCI 21-301, Air Force Materiel Command Technical Order System Implementing Policies.

1-2.4 AFMCMAN 21-1, Air Force Materiel Command Technical Order System Procedures.

1-2.5 AFMCM 406, Oklahoma City Air Logistics Center (OC-ALC).

1-2.6 AFMCM 171-59, Logistics Management of Technical Orders, Preparation of Technical Orders Indexes Subsystem (G022B).

1-2.7 MIL-STD-196, Joint Electronics Type Designation System.

1-2.8 Department of the Army Pamphlet (DA PAM) 25-30, Consolidated Index of Army Publications and Blank Forms.

1-2.9 DOD 4120.15-L, Model Designation of Military Aerospace Vehicles.

1-2.10 DOD 5105.38-M, Appendix D, Security Assistance Management Manual.

1-2.11 TO 00-5-1, AF Technical Order System.

1-2.12 TO 00-5-2, Technical Order Distribution System.

1-2.13 TO 00-5-15, AF Time Compliance TO System.

1-2.14 TO 00-25-115, AFLC Maintenance Engineering Management Assignments.

1-2.15 The preface of each TO index.

1-2.16 Appropriate military specifications and standards.

1-3 RESPONSIBILITIES.

1-3.1 TOs are published under the authority of the Secretary of the Air Force according to AFRPD 21-3.

1-3.2 The Air Force Materiel Command (AFMC) is responsible to Headquarters, US Air Force, for staff surveillance over TO systems operations and development of systems policies and procedures.

1-3.3 The USAF Technical Order Systems Section, (OC-ALC/TILUB) is responsible for developing TO numbering procedures, assigning TO numbers, and operating the G022B TO indexing system. These responsibilities are provided for in TO 00-5-2 and AFMCMAN 21-1. A description of special indexes and TO number assignments for special TO categories is provided in paragraph 1-4.6.

1-3.4 Requests for deviations from established TO numbering procedures, including proposals for new TO numbering patterns, must be coordinated through OC-ALC/TILUB. When opinions differ between TO managers and the TO numbering specialists regarding the application of numbering principles, the numbering specialists will determine the TO number assignment. If a TO number assignment by OC-ALC/TILUB is not acceptable to the TO Manager and agreement cannot be reached

through further exchange of technical information, the TO Manager will refer the problem to Det 2, ESC/AV-2 for review and resolution.

1-4 GENERAL.

1-4.1 TOs are procured from contractors or prepared in-house by Air Force activities. The Single Manager (SM) responsible for a weapon system or commodity is also responsible for TOs to support that system or item. Only the SM's TO Manager or the responsible ALC's TO Home Office are authorized to request TO number assignment. Only OC-ALC/TILUB is authorized to approve and assign TO numbers.

1-4.2 TO Managers or Home Offices complete and submit AFMC Forms 203 and 204, TO Numbering, Indexing and Control Record and its Continuation, to OC-ALC/TILUB for TO number assignment. Publications not authorized by TO 00-5-1 will not be numbered in the TO System without prior approval by Det 2, ESC/AV-2. Procedures for completing and submitting the forms are in AFMCMAN 21-1. These forms are the primary source for establishing a record in the TO Management Information System (MIS). These forms will be replaced by "entry screens" when the Joint Computer-Aided Acquisition and Logistics Support (JCALS) Joint Technical Manual System (JTMS) becomes available for TO Manager use.

1-4.3 Most TOs are prepared according to military standards and performance specifications which prescribe the contents of each TO type. This standardized approach facilitates the uniform assignment of descriptive TO numbers. However, under Acquisition Reform principles, there is more emphasis on purchasing Commercial Off-The-Shelf (COTS) manuals. The lack of a standard format between COTS manuals complicates the grouping of like data into established TO numbering patterns. To maintain stability in the numbering system, OC-ALC/TILUB and Det 2, ESC/AV-2P provide guidance to TO Managers and develop, coordinate and implement new numbering patterns as required.

1-4.4 TO numbers categorize TO data by Air Force technical systems and equipment, provide sequences for filing, and furnish a means for users to identify and establish requirements for distribution of TOs. The structure of the TO number identifies a category of Air Force technical systems, a series of equipment within a system, an equipment subseries within an equipment series, the type of data included in the TO, and the medium on which the TO is distributed.

1-4.5 TO categories are not numbered in a consecutive sequence. Currently, 42 categories are

identified between Category 0 and Category 71. Category 0 identifies TO Index, alphabetical index and cross-reference table TOs. Category 00 identifies general TOs. Categories 1 through 22 are airborne systems that identify aircraft, missiles, aerospace vehicles, and related airborne equipment and component assemblies. Exceptions are the photographic equipment in category 10 and the armament equipment in category 11. Categories 31 through 51 identify Air Force ground systems and related equipment.

1-4.6 An index of current TOs is published periodically for each TO category. Special indexes and responsibilities are as follows:

1-4.6.1 The Nuclear Weapons Directorate located at San Antonio ALC (SA-ALC/NWTD) is responsible for numbering, indexing and distributing Nuclear Weapons TOs. These TOs are announced in TO 0-1-11N and TO 0-1-11N-C.

1-4.6.2 Numbering and indexing of Nuclear Weapons Explosive Ordnance Disposal (NW-EOD) TOs are also accomplished by SA-ALC/NWTD. These TOs are announced in TO 0-1-11N.

1-4.6.3 Numbering and Indexing of Non-Nuclear Explosive Ordnance Disposal (EOD) TOs are accomplished by Det 63, ASC/CC located at the Naval EOD Technology Center, Indian Head, Maryland. These TOs are announced in TO 0-1-60-1.

1-4.6.4 Category 71 provides a special index that lists TOs used only in the Security Assistance Program.

1-4.7 A close working relationship is needed between TO numbering specialists in OC-ALC/TILUB and TO managers to avoid inaccurate TO number assignments. Numbering specialists must determine the TO number by using information provided by the TO managers on AFLC Form 203. If the information furnished on the form is misleading, insufficient, or in error, the numbering specialists could assign an incorrect TO number. This error could have adverse effects on AFLC organizations, contractors, using commands and, in some instances, foreign countries if International Logistics is involved. One major impact of an incorrect TO number assignment is the sizeable funds expenditure required to correct the number, especially when not only must the TO involved be renumbered, but other technical data that contains cross references to the incorrect TO number must be changed as well.

1-4.8 TO Managers are encouraged to work closely with the numbering specialists to ensure the most accurate TO numbers possible. In addition to correctly completing AFLC Forms 203, TO

managers provide assistance to numbering specialists by suggesting TO numbers, identifying categories and equipment, and furnishing telephone and written communications that aid in categorizing specific TO data. TO numbering specialists rely heavily on the technical competence of TO managers and associated activities located at each ALC.

1-5 TECHNICAL ORDER MANAGEMENT INFORMATION SYSTEMS.

1-5.1 Logistics Management of TOs System (LMTOS - G022). G022 is the existing legacy TO management system. The G022B subsystem is responsible for establishing records on each TO, assigning TO numbers and generating TO indexes. System programming limits TO numbers to 25 positions, consisting of at least three groups separated by dashes. Groups may be further separated into parts by the alternation of alpha with numeric characters. TO numbers contain alphanumeric characters, parentheses (counted as numeric for part determination) and dashes; they are all counted in determining the number of positions. See table 1-1 for the current TO numbering patterns.

1-5.2 Joint Computer-Aided Acquisition and Logistics Support (JCALS) Joint Technical Manual System (JTMS). The JCALS JTMS is the multi-service system which will replace the G022 starting in 1998. It is currently being deployed to the ALCs, and will eventually provide direct on-line connectivity from every base into the management system to allow TO ordering, submission of improvements, TO account status, and even on-line distribution of digital TOs to the base.

1-6 TECHNICAL ORDER NUMBERING THEORY.

1-6.1 The basic task of TO numbering specialists is to group similar TO data into categories, systems, equipment series and equipment subseries by means of an identifying numeric or alphanumeric TO number.

1-6.2 Each category of TO data has its own TO numbering pattern. Sufficient flexibility exists within the total numbering system to allow for expansion or contraction within numbering parameters, yet maintain standard application of numbering patterns within each category.

1-6.3 TO numbers are composed of groups separated by dashes, and each group is further divided into parts. The number of parts within any group varies according to the TO data being numbered in a specific category. Each part of a group consists of one or more numeric characters or one or more alpha characters. The numbering patterns used to identify TO data in each category are outlined in Chapters 2 through 41.

1-6.4 A total of seven groups may be used in the TO numbering pattern. TO data is identified, in most categories, by using only the first three or four basic groups. The remaining groups are primarily used to extend the TO number to identify specific sections of sectionalized TOs; supplemental manuals; and supplement, checklist and work-card sequence numbers.

1-6.5 The five major elements of information considered most essential in assigning TO numbers are discussed below:

Table 1-1. Guidelines for TO Numbering

GROUP	MAXIMUM PARTS IN THIS GROUP	MAXIMUM POSITIONS	MAXIMUM ALPHANUMERIC CHARACTERS AND PROGRAM SEQUENCE
1	3	9	NNNNAANN or AAAANNAAA
2	6	21	NNNNNAAAAAANNNNNAAAAANA or AAAAANNNNNNAAAAANNNNAN
3	3	10	NNNNNAAAANN or AAAAANNNAA
4	3	11	NNNNNAAAANN or AAAAANNNAA
5	3	7	NNNAAAN or AAANNNA
6	2	5	NNNAA or AAANN
7	1	2	AA or NN

1-6.5.1 Federal Supply Class (FSC). An FSC is assigned to Air Force stocklisted equipment by cataloging specialists. A system or equipment that has not been assigned an FSC is nonstocklisted, and a TO number will normally not be assigned to the related TO data. The FSC identifies a system, equipment and equipment series that can be related to a TO category and equipment series; e.g., FSC 5825 identifies ground radio navigation equipment and relates to TO numbering as follows:

31R4

31	Ground Electronic Equipment (Category 31)
R	Radio System
4	Navigation Equipment Series

1-6.5.1.1 FSC 5826 identifies airborne radio navigation equipment and relates to TO numbering as follows:

12R5

12	Airborne Electronic Equipment (Category 12)
R	Radio System
5	Navigation Equipment Series

1-6.5.2 Descriptive nomenclature. The nomenclature provided on the AFLC Form 203 supplements the FSC by further defining the system or equipment series. A combination of only the FSC and the descriptive nomenclature can, in many instances, provide the numbering specialist with a complete TO number. For example, if FSC 5826, airborne radio navigation equipment, is provided in conjunction with an equipment nomenclature reading "Maintenance Manual -- Radio Set, Type AN/ARN-24," the following TO number may be assigned:

12R5-2ARN24-2

12	Airborne Electronic Equipment (Category 12)
R	Radio system
5	Navigation Equipment Series
2	Numeric 2 indicates the Equipment is JETDS Nomenclatured
ARN	JETDS Nomenclature that indicates:
	A - Airborne
	R - Radio
	N - Navigation
24	Radio Model 24
2	Maintenance Manual

1-6.5.3 Functional system. The functional system furnished on AFLC Form 203 is the next higher echelon of equipment or system for the equipment covered by the subject TO. The functional system identifies an equipment series if the TO being numbered covers an equipment sub-series. The functional system identifies a system if the TO being numbered covers an equipment series.

1-6.5.4 Part Number. A TO number will not normally be assigned to equipment without a part number, model number or other identifier. Most equipment will have a part number which is submitted on the AFMC Form 204 and input into the ITIES for further reference.

1-6.5.5 AN Nomenclature. If the AN nomenclature appears in the title lines of a TO, it must be reflected in the TO number. AN nomenclatures are requested using a DD Form 61 and must be approved by Air Force Cataloging & Standardization Center (CASC) at Battle Creek Michigan. For further information concerning this system contact CASC/LGFD at DSN 932-5169.

1-7 TECHNICAL ORDER NUMBERING PROCEDURES.

TO Managers requesting TO number assignment submit AFMC Forms 203 and 204 (or JCALS JTMS screen entries) according to procedures provided in AFMCMAN 21-1. The TO numbering specialist will comply with the procedures and guidance provided in the following paragraphs when assigning TO numbers to approved technical data.

1-7.1 Compare the National Stock Class, MMAC, and TO 00-25-115 to determine if the requesting ALC is responsible for indicated NSC or MMAC. Review the title of the NSC to determine the appropriate TO Category.

1-7.2 Using the NSC and equipment nomenclature, determine the appropriate TO category, equipment series and subseries. For numbering General TOs, see paragraphs 1-22 and 1-23.

1-7.3 Once the category, series and subseries have been determined, use the appropriate chapter of this TO for proper numbering patterns within that category.

1-8 IDENTIFYING TYPES OF TECHNICAL ORDERS.

1-8.1 Each type of the various TOs: workcards, inspection instructions, checklists and other media is represented in a TO number by a designated number. These designated numbers are standard within a category, but are not necessarily standard among categories. An example is a field maintenance manual, which is represented by -6 in category 2, but is represented by -2 in other categories.

Numbering specialists should consult the listings of designated numbers for the appropriate category before assigning a number to represent a specific type of TO.

1-8.2 The type of TO is identified in the last basic group of the TO number. Normally this is the third or fourth group; however, in some categories it is necessary to identify an equipment sub-series in the TO number. In these categories, the type of TO will be identified in the fifth group.

1-9 NUMBERING RELATED TECHNICAL ORDERS.

1-9.1 Chapters 2 through 41 include complete lists of numbers authorized to identify specific types of TOs in each TO category. The following list provides brief definitions of dedicated numbers used in all TO categories, except categories 1, 21 and 22. (Additional numbers are required in categories 1, 21, and 22 to identify distinct types of TO data).

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 1 Operating Instructions
- 2 Organizational, Intermediate, Field Maintenance, or Service Manuals
- 3 Depot Maintenance, Overhaul, Schematic, or Wiring Diagram Manuals
- 4 Parts List, Parts Breakdown or Illustrated Parts Breakdown Manuals
- 6 Inspection Requirement Manuals
- 7 Installation and Installation Test Procedure Manuals
- 8 Test Procedures, User Manuals, Reference Manuals, Programmed Test Manuals, or Software-Related Instruction Manuals
- 9 Alignment Instruction Manuals

NOTE

The number 5 is used to identify a wide variety of types of TOs, depending on the applicable TO category.

Refer to paragraph 1-16 for numbering abbreviated TOs and to paragraph 1-18 for numbering TCTOs.

1-9.2 TO data pertaining to the same specific equipment, but contained in more than one type of TO listed in subparagraph 1-9.1 above, is considered to be compatible and, therefore, is numbered together by using the same basic TO number configuration. An operations manual, a maintenance manual and a parts breakdown manual that are

compatible will be numbered in the same TO number series, like those shown in the following examples:

36A12-13-18-1 Operations Manual
36A12-13-18-2 Maintenance Manual
36A12-13-18-4 Parts Breakdown

1-9.3 Equipment modifications cause changes in TO data; and new TOs are issued to reflect the changes. The new or modified TO data does not always replace existing TOs; therefore, it must be identified in the TO number series that is already established. This identification is accomplished by determining the specific type of TO to be numbered and adding 10 to the designator number (e.g., an operations manual, normally a "-1," would become an "-11." This addition provides another sequence for numbering slightly different TO data, pertaining to the same equipment, in the same TO number series. Any subsequent operations manuals will be numbered -21, -31, -41, -51, etc. This 10-number sequence within a TO number series preserves the integrity of the -1 designated number that identifies operations manuals; and it also provides a method of grouping compatible TOs in the same sequence. This same sequence-numbering procedure will be applied to various other types of TOs as required.

1-9.4 Different types of TOs that relate to the same specific equipment, but contain data that is not compatible, will be numbered with the same basic TO number, but will not be numbered in the same 10-number sequence. For example, an operating instructions manual pertaining to specific equipment and a maintenance manual pertaining to a modification of the same equipment are not compatible. The operating instructions manual will receive a basic TO number ending in -1; and the maintenance manual will receive a TO number ending in -12 (in the subsequent 10-number sequence). The same basic TO number will be used (e.g., 10E5-2-14-1 and 10E5-2-14-12).

1-9.5 Two TOs of the same type will not be numbered in the same 10-number sequence of a TO number series. An intermediate maintenance manual and a service manual (each normally numbered -2) cannot be numbered in the same 10-number sequence. One of the manuals will receive a basic TO number ending in -2 and the other will receive the same basic TO number, but will end in -12 (from the following 10-number sequence).

1-9.6 If a TO is too large for efficient use, it may be sectionalized by dividing it into logical equipment segments of two or more sections. Each of the sections will receive the same 10-number-sequence designator for the type of TO. A dash will be added and will be followed by a consecutive

serial number to identify each section (e.g., 12P6-4-14-3-1, 12P6-4-14-3-2, 12P6-4-14-3-3, 12P6-4-14-3-4). Sectionalizing is further described in paragraph 1-14.

1-10 NUMBERING FUNCTIONALLY ORIENTED MAINTENANCE MANUALS.

Functionally oriented maintenance manuals (FOMMs) will be numbered with a -2, to designate the type of TO, as described in paragraph 1-9 and the appropriate section for the category involved. Section numbers may be assigned according to paragraph 1-14, if appropriate.

1-11 NUMBERING MAINTENANCE DEPENDENCY CHARTS.

Maintenance dependency charts will be numbered with a -2, like maintenance TOs.

1-12 NUMBERING CALIBRATION AND MEASUREMENT SUMMARIES TECHNICAL ORDERS.

Calibration and Measurement Summaries TOs will be numbered in the appropriate categories and TO series for the aerospace systems (aircraft, missile, communications-electronics) to which they apply. Calibration and Measurement Summaries TOs relating to general equipment, if no aerospace systems are identified, will be numbered in category 33K.

1-13 NUMBERING COMBINED TYPES OF TECHNICAL ORDERS.

For a TO that combines TO data relating to more than one type of TO, the designated number of the first type of TO identified in the title will be assigned. Thus, a TO bearing the title "Operations, Maintenance, and IPB" will be numbered -1 because operations is the first type of TO identified in the title; a TO bearing the title "Overhaul and IPB" will be numbered -3 because overhaul is the first type of TO identified in the title. This numbering procedure will be used with any combination of types of TOs.

1-14 NUMBERING SECTIONALIZED TECHNICAL ORDERS.

When TO data is sufficiently large and has natural divisions in tasks or equipment breakout which make several smaller manuals more usable and more manageable, a separate TO number is assigned for each section. One example that meets this criterion is aircraft maintenance data, which contains many detailed tasks. Sectionalized documents normally relate to the same system or equipment and are the same type of TO. Different types of TOs will not be sectionalized together in the same serial number sequence. After numbering specialists have assigned the basic TO number

and determined that sectionalization is necessary, an additional group will be added to the basic TO number. This new group will identify the section number of a sectionalized TO as in the following examples:

12P3-2ALQ101-32-1	32	Maintenance Manual (Last Basic Group of TO Number)
	1	First Section of a Sectionalized Maintenance Manual
12P6-4-14-3-4	3	Overhaul Instructions Manual (Last Basic Group of TO Number)
	4	Fourth Section of a Sectionalized Overhaul Instructions Manual
12P3-2ASR5-4-2	4	Illustrated Parts Breakdown (Last Basic Group of TO Number)
	2	Second Section of a Sectionalized Illustrated Parts Breakdown Manual

1-15 NUMBERING TECHNICAL ORDER SUPPLEMENTS, CHANGES, AND PAGE SUPPLEMENTS.

1-15.1 TO supplements are issued to augment or change data in the basic TO. Data in the supplement will normally be incorporated into the basic TO when the next change is issued. TO supplement numbers are assigned by the TO Managers according to established TO policy.

1-15.1.1 A routine supplement is identified by adding one or two alpha characters to the last group of the TO number; e.g., 12P3-2ALA7-3C. The characters A, B, I, O, AA through BZ are not used. The first supplement will be the alpha C.

NOTE

A classified, routine TO supplement will not be issued if its classification would be higher than that of the basic TO. Rather, the classified supplementing material will be issued and numbered as a supplemental manual (paragraph 1-17). This procedure is necessary to overcome special problems encountered in establishing user requirements and distributing classified TOs.

1-15.1.2 An operational supplement is identified by adding an alpha S to the last group of the TO or Flight Manual Program Publication number. A safety supplement is identified by adding an alpha SS to the last group of the TO/Flight Manual number. A single block of sequential numbers is used to assign both operational and safety supplement numbers.

Examples: 1B-52G-1-1SS-1,
1B-52G-1-1S-2,
1B-52G-1-1SS-3.

1-15.1.3 The number of a safety or operational supplement is used only one time (TO 00-5-1).

1-15.1.4 When an interim supplement is formalized, a new supplement number shall be used.

1-15.1.5 A technical order page supplement (TOPS) is identified by adding the alphas TP to the last group of the TO number and adding a serial number (-1, -2, -3, etc.); e.g., 10E5-3-12TP-1.

1-15.1.6 An identifying technical publications sheet (ITPS) is issued to change or supplement a commercial or contractor publication and will be numbered as a routine supplement (paragraph 1-15.1.2). An ITPS will not be issued solely to add the TO number and date, if these were assigned prior to distribution.

1-15.2 TO changes are numbered 1 through 99, A01 through A99, B01 through B99, etc. The change designator appears on the TO title page, but does not become part of the TO number.

1-16 NUMBERING ABBREVIATED TECHNICAL ORDERS.

Abbreviated TOs, including checklists (CLs), workcards (WCs), etc., are identified by adding the alpha designator to the last group of the TO number and adding a sequential number (-1, -2, -3, etc.) to identify the TO as the first, second, third, etc. in a series.

Examples: 1F-15A-2-10CL1
31S5-2FYQ45-6WC-2

1-17 NUMBERING SUPPLEMENTAL MANUALS.

A supplemental manual does not stand alone, but must be used in conjunction with another TO. It usually contains "difference" data or has a security classification different from that of the parent manual. Data in a supplemental manual is not normally incorporated into the parent manual at the next revision; in this manner it differs from a TO supplement. The TO identification number for a supplemental manual is established by adding a

serial number to the parent TO number. The first supplemental manual is -1, the second is -2, etc.

Examples: 31S5-2FYQ45-3-1 is a supplemental manual used with 31S5-2FYQ45-3.
1F-4D-34-1-1-1 is a supplemental manual used with 1F-4D-34-1-1.

1-18 NUMBERING TIME COMPLIANCE TECHNICAL ORDERS.

1-18.1 A time compliance technical order (TCTO) contains technical instructions for the modification or inspection of a specific item of Air Force equipment, or distribution of revised CPIN items. A TCTO may also change or supplement technical data already established in the TO system. A TCTO is identified by a serial number beginning with the number 501 for the first TCTO issued for the item of equipment, and its basic number indicates data that has already been numbered in the TO system. Since a TCTO may affect more than one type of manual, a type-of-manual designator is not included in the TCTO number. The TCTO serial number replaces the type-of-manual designator in the basic TO number.

Examples: 1F-111A-1254
16G1-148-501
21M-LGM30-1030
31P5-2MPN14-534
35A2-2-76-501

NOTE

When a requirement exists to reactivate a TCTO that has been rescinded, the TCTO will be reinstated with the same TCTO number, but with a current date. The number of an inactive TCTO is never reused for a different modification or inspection.

1-18.2 A TCTO supplement is identified by adding an alpha suffix to the TCTO serial number; e.g., 16G1-149-501C.

1-18.3 A TCTO series listing includes only those TO number groups necessary to identify the model, type, or part number of a specific item of equipment. It usually contains two or three groups.

Examples: 1F-111A
16G1-148
21M-LGM30
31P5-2MPN14
35A2-2-76

1-18.4 To establish a TCTO series listing, the TO Manager submits an AFLC Form 203 according to

AFMCMAN 21-1. When it is expected that a TCTO covering more than one item of equipment will be forthcoming, a general TCTO series listing will be established at the appropriate level of generality.

Examples:

- 1F-1 Applicable to More Than One Fighter Aircraft
- 1F-111 Applicable to More Than One Series of F-111 Aircraft
- 1F-111A Applicable Only to the A Series of F-111 Aircraft

1-18.4.1 The mission-design-series (MDS) designators assigned to the B-1, H-1, and T-1 aircraft caused necessary exceptions to be made when numbering general TCTO series and general TOs for these three categories of aircraft. Since the aircraft MDS are the same as normally used for system general TCTO series listings, the number zero (0) is used in the second group of the number to designate a TCTO applying to more than one aircraft series.

1-18.4.2 Examples:

- 1B-0 Applicable to all bomber aircraft.
- 1B-1 Applicable to all models of the B-1 aircraft.
- 1B-1B Applicable to the B-1B aircraft.
- 1H-0 Applicable to all helicopter aircraft.
- 1H-1 Applicable to all models of the H-1 helicopter.
- 1H-1H Applicable to the H-1 helicopter, model H.
- 1T-0 Applicable to all trainer aircraft.
- 1T-1A Applicable to the T-1 trainer, model A.

1-18.5 OC-ALC/TILU will assign a block of TCTO serial numbers for Foreign Military Sales and AF TOs to each ALC and Product Center (PC) TO Home Office responsible for the specific equipment represented by TCTO series listings. Each SM's TCTO Manager will obtain TCTO numbers as required from the block of numbers assigned to their Home Office. When a TCTO manager originates a TCTO for equipment that is covered by TOs prime at another ALC or PC, the manager originating the TCTO shall contact the prime ALC or PC Home Office to obtain a TCTO number.

1-18.5.1 An example of this condition occurs when an accessory item manager at one ALC prepares a TCTO affecting the installation of the accessory on an aircraft weapon system prime at another ALC (AFMCMAN 21-1).

1-18.5.2 A special problem arises when two ALCs and/or PCs are responsible for similar equipment areas that produce general TCTOs in the same TCTO series (e.g., both Sacramento and Warner-Robins ALCs have prime equipment and produce general TCTOs under TCTO series listing 12R1-2AIC). When this condition occurs, OC-ALC/TILUB will assign a separate block of general TCTO numbers to each Home Office involved.

1-19 EMERGENCY TECHNICAL ORDER NUMBERING REQUESTS.

Timely submittal of TO numbering requests will minimize the use of emergency procedures. In the event of a work stoppage or other justified emergency, OC-ALC/TILUB will assign a maximum of four TO numbers based on a telephone call and FAX or e-mail message from the TO Manager. Telephone requests will be followed up with a FAXED copy of the completed AFMC Forms 203 and 204; electronic copies of the forms will be attached to the e-mail request. TILUB will assign a TO number, input the information into the system, and return a copy of the approved forms to the initiator.

1-20 RENUMBERING.

TO renumbering shall be held to the minimum necessary to correct serious TO numbering errors. Renumbering will not be accomplished to align TO numbers with local sequence numbers or other cross reference identifiers. TO numbers will not be cancelled and new TO numbers assigned just for the purpose of renumbering, since this causes unnecessary workloads for TO Numbering Technicians and personnel who maintain the TO Indexes.

1-21 ASSIGNING TO NUMBERS TO ARMY TECHNICAL MANUALS.

TO numbers will be assigned to Army Technical Manuals (TMs) that are adopted for Air Force use according to TOs 00-5-1 and 00-5-2. The Army numbering patterns for TMs are described in Department of the Army Pamphlet (DA PAM) 25-30. To assign appropriate Air Force TO numbers to Army TMs, research DA PAM 25-30, this TO, and other appropriate source data.

1-21.1 Table 1-2 provides a list of the most common types of technical manual designators used for Army TMs and corresponding Air Force type of TO designators. This table is provided as an aid but should not be used to make final determination of an Air Force TO number.

1-21.2 The Army technical manual number should be shown in the numbering request, according to AFMCMAN 21-1.

Table 1-2. Army TM and Air Force Type-of-TO Designators

FOR ARMY TM NUMBERS ENDING IN:	USE AIR FORCE TYPE-OF-TO DESIGNATORS:
-10 -12 -13 -14 -HR (Hand Receipt)	-1, -11, -21, etc.
-20 -23 -24 -25 -30 -34 -35 -40 -45	-2, -12, -22, etc.
-50	-3, -13, -23, etc.
-L (LOAP)	-01
Any of the above numbers with a P suffix. (P is not the same as &P, which does not affect the AF designator.)	-4, -14, -24, etc.

1-22 GENERAL TECHNICAL ORDERS.

In the numbering patterns for each category described in Chapters 2 through 41, numeric characters are used in the second or third group of a TO number to identify the specific equipment covered by the TO. The distinct pattern for a category, or a system within a category, indicates whether the second or third group is used for the specific equipment identifier. The number used as a specific equipment identifier will be greater than 1.

1-22.1 If the number 1 is used in lieu of a specific equipment identifier, the TO is a general technical order (category general, system general, or equipment-series general TO). EXCEPTION: The pattern established for numbering TCTO series for B-1, H-1, and T-1 aircraft (paragraph 1-18.4.1) is also used for general TOs in these systems.

1-22.1.1 Category general TOs apply to more than one type of aircraft, missile, or engine or to more than one equipment system in the category.

1-22.1.2 System general TOs apply to more than one type of aircraft, missile, or engine or to more

than one equipment series within the equipment system.

1-22.1.3 Equipment-series general TOs apply to more than one subseries of equipment within the equipment series. Examples:

<u>TO Number</u>	<u>Equipment Series</u>
9H1-1-102	Accumulators
9H2-1-102	Cylinders and Actuators
34C1-1-101	Leather Cutting Machines
34F2-1-111	Metal Finishing Machines
36A1-1-141	Ambulances
36A2-1-1	Commercial Fleet Vehicles

1-22.1.4 Equipment-subseries general TOs apply to more than one equipment within the equipment subseries. Examples:

<u>TO Number</u>	<u>Equipment Subseries</u>
34F2-2-1-111	Grinders
34F2-3-1-121	Hones
36A2-3-1-1-3	Ford Vehicles
36A2-4-1-102	GMC Vehicles
36A2-5-1-104	Chrysler Motors Vehicles

1-22.2 JETDS general TOs are described in paragraph 1-23.

1-23 JOINT ELECTRONICS TYPE DESIGNATION SYSTEM (JETDS) GENERAL TECHNICAL ORDERS.

1-23.1 A large portion of the TOs in categories 12 and 31 cover equipment identified by JETDS equipment numbers. The JETDS (formerly AN nomenclature system) is described in MIL-STD-196D.

1-23.1.1 A typical JETDS equipment number is AN/APN-167. The alphas AN indicate JETDS equipment. The A (first alpha character following the diagonal) designates the installation as piloted aircraft. The P (second alpha character following the diagonal) designates the type of equipment as radar. The N (third alpha character following the diagonal) designates the purpose of the equipment as navigational aids. The number following the dash designates a specific set of equipment. Table 1-3 provides a complete list of equipment indicators.

1-23.1.2 A typical JETDS component number is RT-771/APN-167. The RT, in accordance with MIL-STD-196D, indicates a receiver and transmitter. The 771 identifies a specific equipment component. The APN-167 (following the diagonal) indicates the component is applicable to the AN/APN-167 equipment set described above.

1-23.1.3 Identifying numbers for TOs covering JETDS equipment and components use a portion of the JETDS number in the second group of the TO number. (See examples of TO numbers in Chapters 15 and 22.)

1-23.1.4 If a single TO is applicable to more than one JETDS equipment set or component at any level of breakdown, a JETDS general TO may be established at that level.

1-23.2 JETDS system-general TOs apply to equipment sets in more than one kind of JETDS installation. These TOs are identified by the numeric 2 in the second group of the TO number. Examples:

1-23.2.1 31P5-2-137 is applicable to both fixed ground installation (indicated by the F following the diagonal in AN/FSA-4A) and general ground-use (indicated by the G following the diagonal in AN/GRC-30).

1-23.2.2 31W4-2-121 is applicable to both general utility installation (indicated by the U following the diagonal in SB-1203/UG) and water installation (indicated by the S following the diagonal in TT-23/SG).

1-23.3 JETDS installation-general TOs apply to equipment sets in more than one JETDS type of equipment within one installation kind. The second group of the TO number will contain a 2 followed by an alpha character that designates the installation kind. Examples:

1-23.3.1 31W4-2G-101 is applicable to a general, general-ground-use component C-7185/G.

1-23.3.2 31W4-2T-102 is applicable to a general-use, ground transportable component CU-1819/T.

1-23.4 JETDS equipment-type general TOs apply to more than one equipment purpose within one type of equipment. The second group of the TO number will contain a 2 followed by an alpha character that designates the equipment installation kind and a second alpha character that designates the type of equipment.

Examples:

1-23.4.1 31W4-2GG-162 is applicable to a general-use component CV-2696/GG. The first G after the diagonal indicates general ground-use installation. The second alpha indicates telegraph or teletype type of equipment.

1-23.4.2 31W4-2TG-144 is applicable to a general-use component TH-5/TG. The T following the diagonal indicates a ground transportable installation. The G indicates the type of equipment is telegraph or teletype.

1-23.5 JETDS purpose general TOs apply to more than one specific equipment set within one equipment purpose. The second group of the TO number will contain a 2 followed by three alpha characters that designate the installation, type of equipment, and purpose, respectively. Examples:

1-23.5.1 31W4-2GGC-142 is applicable to components OU-60/GGC-30 and OU-61/GGC-31.

1-23.5.2 31W4-2TGC-122 is applicable to equipment sets AN/TGC-27 and AN/TGC-28.

1-24 COUNTRY STANDARD TECHNICAL ORDER NUMBERS.

1-24.1 Country Standard TO (CSTO) numbers are assigned to readily identify TOs that support equipment acquired by foreign countries through the Foreign Military Sales Program. These TOs are not used by the United States Air Force (USAF), but are centrally managed in the Security Assistance Technical Order Distribution System (SATODS) for support of the foreign customers. A CSTO may be a complete standalone publication or it may be a supplemental manual containing difference data used in conjunction with a baseline TO.

Table 1-3. Table of JETDS Equipment Indicators ¹

Installation (1 st letter)	Type of Equipment (2 nd letter)	Purpose (3 rd letter)
A - Piloted aircraft B - Underwater mobile submarine D - Pilotless carrier F - Fixed Ground G - General Ground Use K - Amphibious M - Ground, mobile P - Portable S - Water T - Ground, transportable U - General Utility V - Ground, vehicular W - Water surface and underwater combination Z - Piloted and pilotless airborne vehicle combination	A - Invisible light, heat radiation C - Carrier D - Radiac E - Laser G - Telegraph or Teletype I - Interphone and public address J - Electromechanical or inertial wire covered K - Telemetering L - Countermeasures M - Meteorological N - Sound in air P - Radar Q - Sonar and underwater sound R - Radio S - Special types, magnetic, etc or combination of types T - Telephone V - Visual and visible light W - Armament (peculiar to armament, not otherwise covered) X - Facsimile or Television Y - Data Processing	A - Auxiliary assembly ² B - Bombing C - Communications (receiving and transmitting) D - Direction finder reconnaissance and/or surveillance E - Ejection and/or release G - Fire control, or searchlight directing H - Recording and/or reproducing (graphic meteorological and sound) K - Computing M - Maintenance and/or test assemblies (including tool) N - Navigational aids (including altimeters, beacons, compasses, racons, depth sounding, approach and landing) Q - Special, or combination of purposes R - Receiving, passive detecting S - Detecting and/or range and bearing, search T - Transmitting W - Automatic flight or remote control X - Identification and recognition Y - Surveillance (search, detect, and multiple target tracking) and control (both fire and air control)

NOTES:

1 - The following indicator letters, removed from Table 1-3, are not to be used for new type designation assignments:

Installation: C - Air Transportable.

Type of Equipment: B - Pigeon; E - Nupac; F - Photographic purpose; L - Searchlight control; P - Reproducing.

2 - For Department Control Point Use. Not for use by contractors unless directed by procuring activity.

1-24.2 CSTO numbers are distinguished from USAF TO numbers by a two-position alpha prefix (country designator) that identifies the country involved. The balance of the CSTO number is established in the same manner described in this document for USAF TOs. Country designators will be compatible with country codes listed in AFM 67-1, Vol 9 and DOD Manual 5105.38-M, Appendix D.

1-24.3 If the CSTO is a standalone publication used in lieu of a USAF TO, the CSTO will be identified by a country designator plus the same number as the related USAF TO. Only the country designator prefix in the CSTO number will distinguish between them.

1-24.4 When the CSTO is supplemental to a USAF TO or to a standalone CSTO, it will be identified by a country designator prefix plus a -1 or other appropriate designation according to the concept described in paragraph 1-17.

1-24.5 In some instances a standalone CSTO will be for component equipment of a major design departure from any USAF equipment; therefore, it will not be related to any USAF TO.

1-24.6 Examples of CSTOs are as follows:

1-24.6.1 Standalone CSTO - Job guide manual used by Saudi Arabia for F-15 aircraft:

SR1F-15C-2-32JG-30-3	
SR	Designates Saudi Arabia
1	Category 1
F	Basic Mission Fighter Aircraft
15	Aircraft Production Model
C	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
32	Landing Gear System (MIL-STD-1808, Chapter 32)
JG	Job Guide Manual
30	Subsystem and Sub-Subsystem
3	Third in a Series of Manuals

1-24.6.2 CSTO - Supplemental Manual to a USAF TO or to a Standalone CSTO:

VE33D7-3-181-2-1	
VE	Designates Venezuela
33	Category 33
D	Special Purpose Test Equipment
7	Electrical and Electronic Computers Subseries
3	Represents Part Number 2120300 Series
181	
2	Maintenance Instructions
1	Supplemental Manual

1-24.6.3 CSTO - Supplemental to Another CSTO, (to be used with SR43D3-4-12-1-1):

SR43D3-4-12-1-1-1	
SR	Saudi Arabia
43	Category 43
D	Training Devices
3	Flight Simulators Subseries
4	Fighter Aircraft Simulators Subseries
12	Represents Model F-15 Series Aircraft
1	Operating Instructions
1	First Section of a Sectionalized Manual
1	Supplemental to CSTO

1-25 OPERATION AND MAINTENANCE INSTRUCTIONS IN WORK PACKAGE FORMAT.

1-25.1 Operation and maintenance instructions in work package format and subordinate work package format are prepared according to MIL-PRF-87929. The complete TO, which consists of a set of work packages, is numbered by OC-ALC/TILUB according to numbering procedures for the specific equipment category.

1-25.2 Individual work packages will be numbered by the TO Manager using the following criteria:

1-25.2.1 The number will consist of five numeric characters and an alpha prefix of WP or SWP to identify a work package or a subordinate work package as defined in MIL-PRF-87929.

1-25.2.2 A work package will be identified in the first three numeric positions; the last two numeric positions will be zeros (e.g., WP 116 00).

1-25.2.3 A subordinate work package will be identified by using the first three positions to specify the work package and the last two positions to specify the subordinate work package (e.g., SWP 126 19).

1-25.2.4 The alphabetical index work package (as defined in MIL-M-87929) will always be the first work package in the TO (i.e., WP 001 00).

1-25.2.5 The introduction work package (as defined in MIL-PRF-87929) will always be the second work package in the TO (i.e., WP 002 00).

1-25.2.6 Other work packages will be numbered WP 003 00, WP 004 00, and so on as required.

1-26 TOs AVAILABLE ON MULTIPLE MEDIA.

1-26.1 Some TOs may present the same technical data on two or more types of distribution media, such as paper, Compact Disk-Read Only Memory (CD-ROM) and through direct electronic access.

1-26.2 Media-type suffix codes (see below) are used in index listings to identify any TOs available in any medium other than paper, and will allow users to order TO copies on that medium. Index listings for non-paper versions of the TO will include the applicable media-type suffixes followed by an index number. Media-type suffixes will not be used for paper copies. TO media-type suffix codes are:

Code	Medium
CD	CD-ROM
WA	Electronic Access (WWW or WAN)
DV	Digital Video Disk (DVD)
FD	Floppy Disk
MF	Microfiche
MT	Magnetic Tape
VT	Video Tape/Disk

NOTE

Media-type suffixes appear only in the TO Index for ordering purposes. They are not placed on the TOs themselves.

1-26.3 All TO 00-5-1-authorized update methods, including supplements, may be used with printed (paper) copies; but these methods are not always suitable for use with the other media. TOs on CDs, floppy disks, and magnetic type will normally require update by a replacement medium containing either merged TO/Change files or revised TOs (no supplements). TOs on DVD,

microfiche and video tape normally require revision. TOs available through electronic access will be updated by merged Changes or revisions.

1-26.4 The media-type suffix code will allow sight recognition of TOs available on other-than-paper media. The index number following the suffix will be used for several purposes:

1-26.4.1 All media-type suffixes will carry the index "-1," except as described below.

1-26.4.2 If a TO or set of TOs (paragraph 1-27) requires more than one disk or tape, the index number will indicate individual disks/tapes in the set (i.e., disk one of three is -1, disk two of three is -2, and disk three of three is -3).

1-26.4.3 If a set of TOs contains manuals with different classifications or distribution limitations, these TOs may be segregated by disk with different index numbers assigned to the different levels of protection required.

1-26.5 Examples:

1-26.5.1 TO 1B-52G-4-1 is a paper IPB for the B52G and B52H aircraft. A microfiche containing this TO would be indexed as 1B-52G-4-1-MF-1.

1-26.5.2 TO 12P2-2APQ120-2 is an intermediate maintenance manual for a radar indicator. A magnetic tape containing the same TO would be indexed 12P2-2APQ120-2-MT-1.

1-26.5.3 TO 33K-1-100-CD-1 (calibration procedures) is only available on CD. If a paper version existed, it would be indexed as 33K-1-100.

1-26.5.4 The database for the F-22 fighter Interactive Electronic Technical Manual (IETM) will be available on-line through a WAN, and should be numbered 1F-22A-1-WA-1, followed by a note on how to access it. Note that the basic TO number ends in "-1" because ALL procedures, operations and maintenance, are contained in the one database (see paragraph 1-13).

1-27 DISTRIBUTION MEDIA CONTAINING MULTIPLE TOs.

1-27.1 Some digital media have the capacity to store multiple digital TO files on a single unit of the medium. For example, since a CD-ROM will hold approximately 650 megabytes (mb) of information, and most digital TO files are 10 mb or less, a single CD ROM disk can easily hold many average-size TOs.

1-27.2 To conserve increasingly sparse publication and distribution funds, TCMs must take advantage of this capability by grouping TOs on

electronic media for distribution whenever possible. Groupings shall be made logically (e.g., by TO series, sub-system, subject, distribution limitation, classification, etc.) by the TCM, with the concurrence of the using/lead command.

1-27.3 Digital media containing multiple TOs will be numbered and indexed in the TO System to facilitate management and distribution. The number will be indicative of the contents of the disk, be formatted like a TCTO-series number (paragraph 1-18), and include a media-type suffix (paragraph 1-26). Examples:

1-27.3.1 TO 1B-52H-2-CD-1 through 1B-52H-2-CD-5 would contain the Organizational Maintenance Manual Set for the B-52H, provided on a set of 5 CD-ROMs;

1-27.3.2 TO 33D2-17-2-CD-1 would contain unclassified TOs on an Aircraft Field Test Stand provided on CD-ROM, while 33D2-17-2-CD-2 (C)

would contain confidential TOs for the same equipment; and

1-27.3.3 TO 35D-1-DV-1 would be unclassified, Distribution Statement A TOs for Miscellaneous Aircraft Loading and Servicing Equipment provided on digital video disk.

1-27.4 The TO Index listing for a digital medium containing a group of TOs will include a list of the individual TOs contained on the medium and indicate the viewing system required if they are not in the Air Force baseline Indexed Adobe™ Portable Document Format (IPDF).

1-28 COMMERCIAL MANUALS.

When requesting TO number assignment for a commercial manual, the commercial manual number shall be included on the NOTE transaction line ("N01") of the AFMC Form 203.

CHAPTER 2

CATEGORY 0 - NUMERICAL INDEX, ALPHABETICAL INDEX AND CROSS-REFERENCE TABLES

2-1 GENERAL.

2-1.1 Category 0 TOs include the numerical index, alphabetical index and cross-reference tables. TO numbers in Category 0 use three basic groups for TO identification. A fourth group is sometimes added to further separate or sectionalize index publications by equipment subdivisions as described in the introduction. The numbering pattern is identified in paragraph 2-2.

2-1.2 TO 0-1-01 is the "index of indexes" and lists all TO numbers assigned in this category. The preface of TO 0-1-01 contains a cross reference of TO Category Number to appropriate TO Index Number and contains general numbering and indexing information that is applicable to all TO indexes.

2-1.3 The preface of each individual TO index contains information applicable to the specific category that it covers.

2-2 NUMBERING PATTERNS.

2-2.1 GROUP ONE. This group has one part that is a numeric character. This indicator will always be 0 to identify the category.

2-2.2 GROUP TWO. Group two has one part that is a numeric character and identifies the series. Identifiers for the series are listed in paragraph 2-4.

2-2.3 GROUP THREE. This basic group has one part containing one or more numeric characters designating a specific TO. Group three indicators identify the category of equipment TOs covered by each TO index. Group three indicators are as follows:

01	Numerical Indexes, Alphabetical Indexes and Cross-Reference Tables
02	General Technical Orders
1	Aircraft
2	Airborne Engines and Associated Equipment
3	Aircraft Propellers and Rotors
4	Aircraft Landing Gear
5	Airborne Instruments
6	Aircraft and Missile Fuel Systems

7	Airborne Engine Lubricating Systems
8	Airborne Electrical Systems
9	Aircraft and Missile Hydraulic, Pneumatic and Vacuum Systems
10	Photographic Equipment
11	Armament Equipment
12	Airborne Electronic Equipment
13	Aircraft Furnishings and In-Flight Feeding Equipment, Cargo Loading, Aerial Delivery and Recovery Equipment, Aircraft Fire Detection and Extinguishing Equipment
14	Deceleration Devices, Personal and Survival Equipment
15	Aircraft and Missile Temperature Control, Pressurizing, Air Conditioning, Heating, Ice Eliminating and Oxygen Equipment
16	Airborne Mechanical Equipment
21	Guided Missiles
22	Aerospace Vehicles
31	Ground Electronic Equipment
32	Standard and Special Tools
33	Test Equipment
34	Shop Machinery and Shop Support Equipment
35	Ground Handling, Support, Air and Missile Base Operating Equipment
36	Vehicles, Construction and Material-Handling Equipment
37	Fuel-, Oil- and Propellant-Handling Equipment
38	Nonaeronautical Engines
39	Watercraft Equipment
40	Commercial Air-Conditioning, Heating, Plumbing, Refrigerating, Ventilating and Water Treating Equipment
41	Subsistence and Food Service Equipment
42	Coating, Cleaning and Sealing Compounds and Fuels, Gases, Lubricants, Chemicals and Materials

- 43 Simulator and Training Devices
- 44 Common Hardware Equipment
- 45 Railroad Equipment
- 46 Office, Duplicating, Printing and Binding Equipment
- 47 Agriculture Equipment
- 49 Optical Instruments, Timekeeping and Navigational Equipment
- 50 Special Services Equipment
- 51 Automatic Test Systems
- 60 Explosive Ordnance Disposal Procedures
- 71 International Logistics (Security Assistance Programs)

2-2.4 GROUP FOUR. When used, this group has one part that is a numeric character designating a section of the category reflected in group three.

2-3 EXAMPLES OF THE CATEGORY 0 NUMBERING PATTERNS:

2-3.1 Index for general TOs.

0-1-02

- 0 Category 0
- 1 Index Series
- 02 Specific Indicator for General TOs

2-3.2 Index for fighter aircraft:

0-1-1-4

- 0 Category 0
- 1 Index Series
- 1 Indicator for Aircraft Indexes
- 4 Specific Indicator for Fighter Aircraft Indexes

2-3.3 Index for guided-missile TOs:

0-1-21

- 0 Category 0
- 1 Index Series
- 21 Indicator for Guided-Missile Indexes

2-3.4 Cross-Reference table of TCTO numbers to data code numbers.

0-4-2

- 0 Category 0
- 4 Cross-Reference Table Series
- 2 Specific TO Indicator

2-4 CATEGORY 0 NUMBERING SERIES.

- 0 Technical Order Index, Alphabetical Index and Cross-Reference Tables
- 0-1 TO Indexes
- 0-2 Alphabetical Indexes
- 0-4 Cross-Reference Tables

CHAPTER 3

CATEGORY 00 - GENERAL TECHNICAL ORDERS

3-1 GENERAL.

3-1.1 Det 2, ESC/AV-2 establishes responsibilities for preparing Category 00 general Methods and Procedures TOs (MPTOs) listed in TO 0-1-02. When a TO Manager requests a new Category 00 TO number, OC-ALC/TILUB determines if AV-2 coordination and approval have been obtained before assigning a TO number.

3-1.2 Category 00 TO data is normally TO data which is related to multiple categories; or it is data which cannot be identified with any other established category.

3-1.3 The TO numbering pattern in Category 00 uses three basic groups. A fourth group is sometimes added to further separate general TOs or to sectionalize by equipment subdivisions as described in the introduction. The numbering pattern is explained in paragraph 3-2.

3-2 NUMBERING PATTERNS.

3-2.1 **GROUP ONE.** This group contains one part. The designator 00 identifies the TO as being in the general category.

3-2.2 **GROUP TWO.** This group contains two parts.

3-2.2.1 Part one is made up of one or more numeric characters that identify the subject matter series. The numbering series are listed in paragraph 3-4.

3-2.2.2 Part two, when used, consists of one or more alpha characters that further breakdown the subject matter into subseries.

3-2.3 **GROUP THREE.**

3-2.3.1 This group has one or more numeric characters that identify the specific type of TO.

3-2.3.2 In some instances the numeric characters in group three are followed by one or more alpha characters that indicate a series of checklists or supplements. The following alpha characters are authorized for use in Category 00.

- CL - Checklists
- S - Operational Supplements

3-2.3.3 In addition to the three basic groups, another group may result by sectionalizing, according to paragraph 1-14, or by using an aircraft or engine type-model-series designator to identify the section.

3-3 EXAMPLES OF TECHNICAL ORDER NUMBERING PATTERNS IN CATEGORY 00.

3-3.1 A general TO covering the use of tape for packaging:

00-85-35	
00	General TO Category
85	Protective Packaging and Preservation Packaging
35	Selection and Use of Tape for Packaging

3-3.2 A TO covering disposal of critical alloys for C135 aircraft:

00-25-113-C135	
00	General TO Category
25	Miscellaneous TOs
113	TO on Conservation, Segregation, and Disposal of Critical Alloys and Precious Metals
C135	Section for C135 Aircraft

3-3.3 A TO on installation and operation of part number (PN) 6650 series electrical systems:

00-105A-12	
00	General Category
105	Air Installation TOs
A	Electrical Facilities Installation
12	Designator for Specific Manual for PN 6650 Series Equipment

3-4 LISTING OF CATEGORY 00 NUMBERING SERIES.

00	General TOs
00-5	Technical Publications Systems
00-20	Maintenance Management System
00-20B	Vehicles
00-20D	Railroad Equipment
00-20F	Office Equipment

00-20K	Inspection and Age Control of USAF Equipment	00-85A	Specific Equipment TOs
00-25	Miscellaneous TOs	00-85B	Transportation Packaging Orders
00-33K	General Calibration Procedures	00-105	Air Installation TOs, General
00-35	Administrative Publications	00-105A	Electrical Facilities
00-35A	Supply	00-105E	Fire Protection and Rescue
00-35D	Blank Forms, Etc.	00-105K	Harvest Eagle Water System
00-75	Air Evacuation	00-110	Special Weapons, Defense, and Nuclear Disposal and Decontamination
00-80	Special TOs	00-110A	Atomic and Radiological Warfare
00-80A	Shipping Export	00-110N	Nuclear Applications, Monitoring, Handling, Disposal and Decontamination
00-80C	Aircraft Crash Procedures		
00-80F	Mortuary Equipment		
00-80G	Public Display Procedures		
00-80H	Joint Service ID		
00-85	Protective Packing and Preservation Packaging, General		

CHAPTER 4

CATEGORY 1 - AIRCRAFT

4-1 GENERAL.

4-1.1 TO data numbered in the aircraft category includes flight and operations manuals; organizational (flight line) maintenance and overhaul instructions; inspection requirements and specified procedures performed on the various types of aircraft. TO numbers incorporate the aircraft basic mission, design, series (MDS), designators specified in DOD 4120.15-L to group types of aircraft data together according to mission.

4-1.2 TO data pertaining to more than one type of aircraft or more than one model within a specific type of aircraft is numbered as a General TO as described in paragraph 1-22.

4-1.3 TO data pertaining to more than one production series of a specific aircraft model is numbered as the earliest production series. A sectionalized structural repair manual applicable to the F-111 aircraft production series D, E and F is numbered in the D series.

4-2 NUMBERING PATTERNS.

This paragraph describes complete numbering patterns for all Category 1 TOs, except those maintenance manuals prepared following Specification MIL-M-83495. Numbering patterns for MIL-M-83495 organizational maintenance manuals are covered in paragraphs 4-2.1, 4-2.2, 4-4 and 4-5.

4-2.1 GROUP ONE. In Category 1, this group has only two parts identifying the category and aircraft mission.

4-2.1.1 Part one is always the numeric 1 to identify Category 1.

4-2.1.2 Part two is an alpha character identifying the aircraft basic mission as outlined in AFR 82-1. The following is a list of the basic mission alpha identifiers:

- A - Attack Aircraft
- B - Bomber Aircraft
- C - Cargo/Transport Aircraft
- E - Special Electronic Aircraft
- F - Fighter Aircraft
- G - Gliders
- H - Helicopter Aircraft
- L - Observation Aircraft
- P - Patrol

- T - Trainer Aircraft
- U - Utility Aircraft
- V - VTOL/STOL

NOTE

Observation aircraft are identified by the basic mission symbol L instead of the alpha O as identified in AFR 82-1. To avoid possible confusion with numerals, the alpha characters I and O are not used.

4-2.2 GROUP TWO. Group two contains two or three parts that incorporate the aircraft model number; the modified aircraft mission (in parentheses) if applicable; and aircraft production series if required.

4-2.2.1 Part one contains one or more numeric characters identifying the aircraft model.

4-2.2.2 If part two is an alpha character in parentheses, it identifies a modified aircraft mission. If the modified mission is not applicable, the aircraft production series identifier described in part three follows the aircraft model number. The following is a listing of modified aircraft mission identifiers outlined in AFR 82-1:

- A - Attack
- B - Bomber
- C - Cargo/Transport
- D - Director
- E - Special Electronics
- F - Fighter
- H - Search Rescue
- K - Tanker
- L - Cold Weather
- M - Multi-Mission
- P - Patrol
- Q - Drone
- R - Reconnaissance
- T - Trainer
- U - Utility
- V - Staff
- W - Weather

4-2.2.3 Part three is an alpha character indicating the aircraft production series. The first series manufactured is identified with the alpha A, the second series with the alpha B, continuing through the alphabet.

4-2.2.4 If the number is for a general aircraft TO, (paragraph 1-22) groups one and two are established using the following designators:

- 1-1 - General Aircraft
- 1-1A- General Engineering Manuals
- 1-1B- Weight and Balance
- 1-1C- Air Refueling
- 1-1G- Maintenance Analysis and Structural Integrity Information System
- 1-1H- Aircraft Battle Damage Repair
- 1-1M- Non-Nuclear Munitions Delivery

4-2.3 GROUP THREE. In Category 1, group three primarily identifies the type of TO, instruction or procedure. This can be accomplished by using either one or two parts.

4-2.3.1 Part one consists of one or more numeric characters reserved to indicate a specific type of TO. The following is a list of numbers reserved to identify the TOs in Category 1.

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Flight Manuals
- 2 Maintenance Instructions
- 3 Structural Repair, Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 5 Basic Weight Checklist and Loading Data
- 5-1 Sample Checklist Basic Weight
- 5-2 Loading Data
- 6 Inspection Requirements
- 7 Winterization Instructions
- 8 Test Procedures, or Checkout Manuals
- 9 Cargo Loading
- 10 Power Package Buildup Instructions
- 11 Auxiliary Power Package Buildup Instructions
- 12 Maintenance Materiel Management Manuals
- 13 Weapons Loading Manuals
- 14 Atomic Loading and In-Flight
- 15 Assembly, Test, and Storage Procedures

NOTE

SA-ALC/NWTD has responsibility for assigning Category 1 TO numbers when the group three, part one is -16 or -25 through -31 (paragraph 1-4.6.1).

- 16 Atomic Loading and In-Flight (Reserved for Special Weapons)
- 17 Storage of Aircraft
- 18 Maintenance of Airborne Equipment
- 19 Conversion Instructions
- 20 Standard Practices
- 21 Aircraft Inventory Record Master Guides
- 22 Reserved
- 23 Corrosion Control
- 24 Reserved
- 25 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 26 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 27 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 28 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 29 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 30 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 31 Air Crew Weapon Delivery Manuals (Reserved for Special Weapons)
- 32 In-Flight Maintenance Manuals
- 33 Non-Nuclear Munitions Loading
- 33-1 Non-Nuclear Munitions Loading - Tactical Missions
- 33-2 Non-Nuclear Munitions Loading - Strategic Missions
- 33-3 Non-Nuclear Munitions Loading - Defense Missions
- 33-4 Non-Nuclear Munitions Loading - Transport Missions
- 34 Non-Nuclear Munitions Delivery
- 34-1 Non-Nuclear Munitions Delivery - Tactical Missions
- 34-2 Non-Nuclear Munitions Delivery - Strategic Missions

- 34-3 Non-Nuclear Munitions Delivery
- Defense Missions
- 34-4 Non-Nuclear Munitions Delivery
- Transport Missions
- 35 Non-Munitions Accessories
- 36 Non-Destructive Inspection
Manuals
- 37 Calibration and Measurement
- 38 Aircraft Structural Integrity
Program
- 39 Aircraft Battle Damage Repair TOs
- 43 Aircraft Mission Maintenance Data
- 44 Combat Weapon Delivery System
(Shall not include imbedded
data)
- 501 and higher Time Compliance TOs

4-2.3.2 Part two. In some instances some of the reserved numbers listed in part one above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements, and other functions. Alpha characters authorized for use in Category 1 are listed as follows:

- CF - Acceptance or Functional Check
Flight Procedures
- CL - Checklists
- FP - Film Packs
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards
- WS - Worksheets

4-2.4 GROUP FOUR. This group consists of either one or two parts that identify a supplemental manual, identify sections of a sectionalized TO or indicate the sequence number of specific TO data in a series of inspections, supplements, or functions.

4-2.4.1 Part one contains one or more numeric characters identifying a supplemental manual, indicating the sequence number of data in a series or identifying the section number of a sectionalized TO.

NOTE

When used immediately following the number “-6WC” in Category 1, the number “-101” designates Contingency (Quick Look) Workcards.

4-2.4.2 Part two may be used, as in paragraph 4-2.3.2, to add one or more of the alpha characters

indicating a series of checklists, workcards, supplements, and other functions.

4-2.5 GROUP FIVE. If TO numbers have been extended by sectionalizing or establishing supplemental numbers, the use of group five may be necessary to complete the TO number. Group five may consist of one to two parts (used in the same manner as described in paragraph 4-2.4) and identifies a supplemental manual or sections of a sectionalized TO or indicates the sequence number of specific TO data in a series of inspections, supplements, or functions.

4-2.6 GROUP SIX: In some instances sectionalizing Category 1 TOs will extend the number to require using group six to complete the TO number. Group six will consist of one part made up of one or more numeric characters. Group six identifies a supplemental manual; identifies sections of a sectionalized TO; or indicates the sequence number of specific TO data in a series of inspections, supplements or functions in the same manner described in paragraph 4-2.4.1.

4-3 EXAMPLES OF NUMBERING PATTERNS.

The following are examples of common numbering patterns for Category 1 TOs (numbering patterns for Specification MIL-M-83495 maintenance manuals are described elsewhere in paragraphs 4-4 and 4-5).

4-3.1 Flight manual:

1B-52D-1

- | | |
|----|---------------------------------------|
| 1 | Category 1 |
| B | Basic Mission Bomber |
| 52 | Aircraft Model Number |
| D | Aircraft Production Series |
| 1 | Number Reserved for Flight
Manuals |

4-3.2 IPB:

1C-135(K)A-4

- | | |
|-----|-------------------------------------|
| 1 | Category 1 |
| C | Basic Mission
Cargo/Transport |
| 135 | Aircraft Model Number |
| (K) | Modified Aircraft
Mission Tanker |
| A | Aircraft Production Series |
| 4 | Number Reserved for IPBs |

4-3.3 Inspection workcard:

1C-131A-6WC-7

1	Category 1
C	Basic Mission Cargo/Transport
131	Aircraft Model Number
A	Aircraft Production Series
6	Number Reserved for Inspection Requirements
WC	Indicates Workcard Media
7	Sequence Number of the Workcard

4-3.4 Sectionalized TO:

1C-130A-2-3

1	Category 1
C	Basic Mission Cargo/Transport
130	Aircraft Model Number
A	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
3	Identifies a Section Covering Hydraulic Systems.

4-3.5 Supplemental manual:

1F-5E-1-1

1	Category 1
F	Basic Mission Fighter
5	Aircraft Model Number
E	Aircraft Production Series
1	Number Reserved for Flight Manuals
1	Identifies the First Supplemental Manual

4-3.6 Supplemental manual to a sectionalized maintenance instruction:

1F-4C-2-14-1

1	Category 1
F	Basic Mission Fighter
4	Aircraft Model Number
C	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
14	Identifies a Section for Integrated Electronic Central Radar Altimeter, Radar Beacon System, Speech Security System, ILS/VOL System
1	Identifies the First Supplemental Manual

4-3.7 Safety supplement to a sectionalized TO:

1B-52D-33-2-2SS-1

1	Category 1
B	Basic Mission Bomber
52	Aircraft Model Number
D	Aircraft Production Series
33	Number Reserved for Non-Nuclear Munitions Loading Procedures
2	Number Reserved for Strategic Missions
2	Identifies a Section Covering External Stores Munitions
SS	Indicates a Safety Supplement
1	Sequence Number of the Safety Supplement

4-4 MILITARY SPECIFICATION MIL-PRF-83495 MAINTENANCE MANUALS.

Organizational maintenance manuals that conform to Specification MIL-PRF-83495 use a special numbering pattern. TO numbers assigned for these manuals shall agree with the System/Subsystem/Subject categories listed in MIL-STD-1808.

Groups one, two and three of the TO number are formed in the same manner described in paragraph 4-2. However, groups four, five, six and seven are formed in a different manner as described below.

4-4.1 GROUP FOUR. For MIL-PRF-83495 maintenance manuals, this group consists of two parts.

4-4.1.1 Part one contains two numeric characters that identify the chapter number in MIL-STD-1808 and the equipment system or subject matter that the TO covers. Systems designators used in group four, part one are as follows:

GENERAL

00	- Aircraft - General
01 through 04	- Reserved
05	- Time Limits/Maintenance Checks
06	- Dimensions and Areas
07	- Lifting, Shoring, Recovery and Transporting
08	- Leveling and Weighing
09	- Towing and Taxiing
10	- Parking and Mooring
11	- Placards and Markings
12	- Servicing
13	- Equipment Storage
14	- Aircraft Loading and Off-Loading
15	- Support Equipment

- 16 - Siting Installation
- 17 - Preparation for Use and Shipment
- 18 - Weapons Instrumentation
- 19 - Training Equipment

AIRFRAME SYSTEMS

- 20 - Standard Practices - Airframe Systems
- 21 - Air Conditioning
- 22 - Auto Flight
- 23 - Communications
- 24 - Electrical Power
- 25 - Equipment/Furnishings
- 26 - Fire Protection
- 27 - Flight Controls
- 28 - Fuel
- 29 - Hydraulic Power
- 30 - Ice and Rain Protection
- 31 - Indicating/Recording Systems
- 32 - Landing Gear
- 33 - Lights
- 34 - Navigation
- 35 - Oxygen
- 36 - Pneumatic
- 37 - Vacuum
- 38 - Water/Waste
- 39 - Electrical/Electronic Components and Multifunction Units
- 40 - Standard Practices - Integrated Avionics
- 41 - Water Ballast
- 42 - Integrated Avionics Architecture
- 43 - Communications - Staff
- 44 - In-Flight Refueling-Tanker
- 45 - Central Maintenance System (CMS)
- 46 - System Integration and Display
- 47 - Liquid/Gaseous Nitrogen
- 48 - Communications/Navigation/Identification
- 49 - Airborne Auxiliary Power

STRUCTURE

- 50 - Reserved
- 51 - Standard Practices - Structures
- 52 - Doors
- 53 - Fuselage
- 54 - Nacelles/Pylons
- 55 - Stabilizers
- 56 - Windows and Canopies
- 57 - Wings
- 58 - Reserved
- 59 - Reserved

PROPELLER/ROTOR

- 60 - Standard Practices - Propeller
- 61 - Propellers/Propulsors
- 62 - Rotors
- 63 - Rotor Drives
- 64 - Tail Rotor
- 65 - Tail Rotor Drives
- 66 - Folding Blades/Pylon
- 67 - Rotors Flight Controls
- 68 - Reserved
- 69 - Reserved

POWER PLANT

- 70 - Standard Practices - Engine
- 71 - Power Plant
- 72 - Engine
- 72(1) - Engine - Turbine/Turboprop
- 72(2) - Engine - Reciprocating
- 73 - Engine Fuel and Control
- 74 - Engine Ignition
- 75 - Engine Air
- 76 - Engine Controls
- 77 - Engine Indicating
- 78 - Engine Exhaust
- 79 - Engine Oil
- 80 - Engine Starting
- 81 - Turbines
- 82 - Water Injection
- 83 - Accessory Gearboxes
- 84 - Propulsion Augmentation
- 85 through 90 - Reserved

MILITARY SYSTEMS

- 91 - Charts/Diagrams
- 92 - Electrical Power Multiplexing
- 93 - Surveillance
- 94 - Weapon System
- 95 - Crew Escape and Safety
- 96 - Missiles, Drones and Telemetry
- 97 - Image Recording
- 98 - Meteorological and Atmospheric Research
- 99 - Electronic Warfare

4-4.1.2 Part two consists of two alpha characters that identify the function of maintenance manuals and are used in conjunction with the chapter numbers listed in MIL-STD-1808. The following is a list of authorized alpha designators to be used with these functions:

- FI - Fault Isolation Manual
- FR - Fault Reporting Manual
- GE - General Equipment Manual

GS - General System Manual
 JG - Job Guide Manual
 SD - Schematic Diagram Manual
 WD - Wiring Data Manual

4-4.1.3 Other previously authorized alpha designators remaining in use on some current TOs include the following:

GA - General Aircraft Manual
 MS - Maintenance Support Manual
 TS - Troubleshooting Manual

4-4.2 GROUP FIVE. This group has one part consisting of two numeric characters. The first digit denotes the subsystem, as defined under the appropriate system in MIL-STD-1808. The second digit is assigned by the manufacturer and denotes the sub-subsystem if further breakout is required for a complex subsystem. A zero in either, or both, positions indicates there is no equipment breakout at that level.

4-4.3 GROUP SIX. This group has only one part, consisting of one or more numeric characters, that identify the TO series number of the subsystem indicated in group five.

4-4.4 GROUP SEVEN. In the rare instances when it is used, this group has one part and consists of one or more numeric characters identifying a section of a sectionalized TO or identifying a supplemental manual (paragraph 4-5.1).

4-4.5 ILLUSTRATED PARTS BREAKDOWN. When maintenance manuals are written to conform to MIL-PRF-83495, the related Illustrated Parts breakdown will be numbered to indicate the system involved. Groups one, two, and three of the TO number are formed in the same manner described in paragraph 4-2. Groups four and five are described below.

4-4.5.1 GROUP FOUR. This group consists of one part, which is the chapter number from MIL-STD-1808, indicating the system for the equipment covered.

4-4.5.2 GROUP FIVE. This group consists of one part. One or more numeric characters identify the manual series number of the system indicated in group four.

4-5 EXAMPLES OF NUMBERING PATTERNS FOR MIL-PRF-83495 MANUALS.

4-5.1 Supplemental manual applicable to F16A aircraft:

1F-16A-2-93JG-00-1-1	
1	Category 1
F	Basic Mission Fighter
16	Aircraft Production Model
A	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
93	Surveillance System (MIL-STD-1808, Chapter 93)
JG	Job Guide Manual
00	General (No Specific Subsystem Identified)
1	First in a Series of Manuals
1	Identifies the First Supplemental Manual

4-5.2 General fault reporting manual for F16B aircraft:

1F-16B-2-00FR-00-1	
1	Category 1
F	Basic Mission Fighter
16	Aircraft Production Model
B	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
00	General (No Specific System Identified)
FR	Fault Reporting Manual
00	General (No Subsystem Identified)
1	First in a Series of Manuals

4-5.3 Job guide manual for air-conditioning system applicable to F15A aircraft:

1F-15A-2-21JG-61-2

1	Category 1
F	Basic Mission Fighter
15	Aircraft Production Model
A	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
21	Air-Conditioning (MIL-STD-1808, Chapter 21)
JG	Job Guide Manual
61	6 Indicates Temperature Control Subsystem (MIL-M-83495)
	1 Indicates the First Subsystem Identified by the Manufacturer
2	Second in Series of Manuals

4-5.4 Job guide manual for landing gear system applicable to F16B aircraft:

1F-16B-2-32JG-30-3

1	Category 1
F	Basic Mission Fighter
16	Aircraft Production Model
B	Aircraft Production Series
2	Number Reserved for Maintenance Instructions
32	Landing Gear System (MIL-STD-1808, Chapter 32)
JG	Job Guide Manual
30	Extension and Retraction Subsystem
3	Third in a Series of Manuals

4-5.5 Illustrated parts breakdown for air-conditioning system of F16A aircraft:

1F-16A-4-21-1

1	Category 1
F	Basic Mission Fighter
16	Aircraft Production Model
A	Aircraft Production Series
4	Number Reserved for IPBs
21	Air-Conditioning System (MIL-STD-1808, Chapter 21)
1	First in a Series of Manuals

CHAPTER 5

CATEGORY 2 - AIRBORNE ENGINES AND ASSOCIATED EQUIPMENT

5-1 GENERAL.

5-1.1 Category 2 contains TOs pertaining to four basic types of airborne engines. Numbering patterns are established primarily to identify these engine types that are: auxiliary gas turbine engines, jet engines, rocket engines and reciprocating engines. TO numbers for airborne engine associated equipment use both three and four basic groups. Other TO numbers for airborne engines use only three basic groups.

5-1.2 TO data pertaining to more than one type of engine is numbered in the category general series.

5-1.3 Data pertaining to more than one engine model within an engine type is numbered in the engine type general series.

5-2 NUMBERING PATTERNS.

5-2.1 GROUP ONE. This group basically has three parts that identify the category, type of engine and any associated equipment identifiers.

5-2.1.1 Part one is always the numeric 2 identifying Category 2.

5-2.1.2 Part two is an alpha character that identifies one of four types of engines, i.e., G - auxiliary gas turbine engine; J - jet engine; K - booster and rocket engine; and R - reciprocating engine. When the TO number is for associated equipment, the alpha A is added immediately following the engine type designator, i.e., GA, JA, KA, and RA.

5-2.1.3 Part three contains one or more numeric characters that identify the associated equipment series. The associated equipment series numbers are outlined in paragraph 5-4.

5-2.2 GROUP TWO. In group two, each engine type is further defined according to the method of propulsion. Numbering patterns used with each method of propulsion are outlined in the following examples:

5-2.2.1 JET ENGINES.

5-2.2.1.1 Part one consists of one or two alpha characters that identify the type of propulsion for jet engines as follows: J - turbojet, RJ - ramjet, T - turboshaft and turboprop; and for turbofan two designators have been used: TF and F. The TF

designator was used for turbofan prior to November 1972 and F has been used since MIL-STD-879A was published on 14 November 1972.

5-2.2.1.2 The second part of group two has one or more numeric characters identifying the engine model number, i.e.:

2J-F100	
2	Category 2
J	Jet Engines
F	Turbofan Subtype
100	Engine Model Number

5-2.2.2 BOOSTER AND ROCKET ENGINES.

5-2.2.2.1 Part one of group two pertaining to this type engine identifies the fuel as either LR - liquid fuel or SR - solid fuel.

5-2.2.2.2 The second part of group two identifies the rocket engine model number, i.e.:

2K-SR97	
2	Category 2
K	Booster or Rocket Engine
SR	Solid Fuel Subtype
97	Engine Model Number

5-2.2.3 RECIPROCATING ENGINES.

5-2.2.3.1 Part one of group two pertaining to this type engine identifies the engine sub-type as L - in line; O - opposed; and R - radial.

5-2.2.3.2 The second part of group two identifies the reciprocating engine model number, i.e.:

2R-R1830	
2	Category 2
R	Reciprocating Engine
R	Radial Subtype
1830	Engine Model Number

5-2.2.4 AUXILIARY GAS TURBINE ENGINES.

These engines are auxiliary types including gas turbine engines; gas turbine generators; gas turbine power units; etc. Group two is composed of alpha and numeric characters identifying the equipment model number, i.e.:

2G-GTCP165

2 Category 2
 G Auxiliary Gas Turbine Engines
 GTCP Alpha Prefix for Model Number
 165 Model Number

5-2.2.5 ASSOCIATED EQUIPMENT.

5-2.2.5.1 When the TO number has only three groups, group two contains one or more numeric characters representing the model, type, or PN assigned to specific equipment.

5-2.2.5.2 When the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two and the model, type or PN is identified in group three.

5-2.3 GROUP THREE.

5-2.3.1 When a TO number has only three basic groups, the third group of the TO number identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 2:

- 01 List of Applicable Publications (LOAP)
- 1 Operating Instructions
- 2 Service or Maintenance Instructions
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 5 Overhaul Changes or Calibration and Measurement Summary
- 6 Field Maintenance
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals or Programmed Tests
- 9 Non-Destructive Inspection Manuals

5-2.3.2 In some instances the reserved numbers in the third group are followed by an alpha character or characters indicating a series of checklists, workcards and supplements. The following alpha characters are authorized for use in Category 2:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

5-2.3.3 When the TO number has four basic groups, the third group contains one or more

numeric characters representing the model, type or PN assigned to specific equipment.

5-2.4 GROUP FOUR. When the TO number has four basic groups, the fourth group identifies specific types of TOs as described in paragraph 5-2.3.1, above.

5-3 CATEGORY 2 NUMBERING PATTERNS.

5-3.1 Operation manual for a gas turbine generator, model GTG 331:

2G-GTG331-1

2 Category 2
 G Gas Turbine Engines
 GTG331 Engine Model Number
 1 Number Reserved for Operating Instructions

5-3.2 Maintenance workcard for J-75 turbo-jet engine:

2J-J75-6WC-1

2 Category 2
 J Jet Engines
 J Turbojet
 75 Engine Model Number
 6 Number Reserved for Field Maintenance
 WC Identifies Workcards
 1 First in a Series of Workcards

5-3.3 Overhaul instructions for liquid fuel rocket engine, model LR-89:

2K-LR89-3

2 Category 2
 K Rocket Engines
 LR Liquid Fuel
 89 Rocket Engine Model Number
 3 Number Reserved for Overhaul Instructions

5-3.4 Overhaul instructions with illustrated parts breakdown for lube oil pump assembly, PN 7453 on C124 aircraft:

2JA6-2-2-3

2 Category 2
 J Jet Engines
 A Associated Equipment
 6 Power Plant Equipment Series
 2 Pump Equipment Subseries
 2 Identifies PN 7453
 3 Number Reserved for Overhaul Instructions

5-3.5 Overhaul instructions with illustrated parts breakdown for push-pull assembly PN 12375, F106 aircraft:

2JA8-12-3

2	Category 2
J	Jet Engines
A	Associated Equipment
8	Throttle Control Series
12	Identifies PN 12375
3	Number Reserved for Overhaul Instructions

5-4 CATEGORY 2 NUMBERING INDICATORS.

2	AIRBORNE ENGINES AND ASSOCIATED EQUIPMENT
2G	AUXILIARY GAS TURBINE ENGINES
2GA	ASSOCIATED EQUIPMENT
2GA1	CONTROL ASSEMBLIES
2J	JET ENGINES
2J-F	Turbofan
2J-J	Turbojet
2J-RJ	Ramjet
2J-T	Turboprop
2J-TF	Turbofan (Use 2J-F)
2JA	ASSOCIATED EQUIPMENT
2JA1	AFTERBURNER CONTROL SYSTEMS
2JA2	AIR INLETS
2JA3	TURBINE STARTERS AND PROPULSION STARTING DEVICES
2JA4	JET ENGINE BRAKING DEVICES
2JA5	GAS TURBINE AUXILIARY POWER PLANTS
2JA6	POWER PLANT ASSOCIATED EQUIPMENT
2JA6-2	Pumps
2JA6-3	Control and Governor Assemblies
2JA6-4	Gas Turbine Compressors
2JA6-5	Generators
2JA7	CAP ASSEMBLIES
2JA8	THROTTLE CONTROLS
2JA9	GRIP ASSEMBLIES
2JA10	VALVES
2JA10-2	Control
2JA11	HARNESS ASSEMBLIES

2JA12	ENGINE CONTROLS
2JA13	CONTAINERS (use 35E20)
2JA14	ENGINE DRAIN SYSTEMS
2JA15	STARTER GENERATORS
2JA16	GEARS
2JA17	Do not use
2JA18	POWER PACKAGE QEC
2K	BOOSTER AND ROCKET ENGINES
2K-LR	Liquid-Type Rocket Motors
2K-SR	Solid-Type Rocket Motors
2K-SRM	Solid-Type Propellant Missiles
2KA	ASSOCIATED EQUIPMENT
2KA1	POWER PLANT ASSOCIATED EQUIPMENT
2KA1-2	Control and Governor Assemblies
2KA1-3	Propulsion Valves
2KA1-4	Vent Adapters (Propulsion)
2KA1-5	Ejectors (Propulsion)
2KA1-6	Turbine Pumps
2KA1-7	Pack Assemblies
2KA1-8	Consoles
2KA1-9	Panel Assemblies (Propulsion)
2KA1-10	Nozzles
2R	RECIPROCATING ENGINES
2R-L	In-Line
2R-O	Opposed
2R-R	Radial
2RA	ASSOCIATED EQUIPMENT
2RA1	ENGINE CONTROL SYSTEMS
2RA1-2	Automatic
2RA1-3	Manual
2RA2	ENGINE COOLING EQUIPMENT
2RA2-2	Engine Cooling and Anti-Icing Fans
2RA3	ENGINE MOUNTING SYSTEMS
2RA3-2	Engine Mounts
2RA3-3	Vibration Isolators
2RA4	TURBO AND ENGINE DRIVEN SUPERCHARGERS
2RA5	SUPERCHARGER CONTROL SYSTEMS
2RA5-2	Control Systems
2RA5-3	Actuators
2RA5-4	Regulators
2RA5-5	Governors
2RA5-6	Junction Boxes
2RA5-7	Amplifiers
2RA5-8	Motors, Waste-Gate
2RA5-9	Pressuretrols
2RA5-10	Boost Selectors
2RA5-11	Control Valves

2RA5-12 Valves, Barometric Anti-Leak
2RA5-13 Adapter Units, Turbo-Regulators
2RA5-14 Switches, Air-Pressure
2RA6 SUPERCHARGER RELATED
EQUIPMENT
2RA6-2 Intercoolers
2RA6-3 Motor Assemblies
2RA6-4 Solenoids

2RA6-5 Link Assemblies
2RA7 AUXILIARY POWER PLANTS
2RA8 ENGINE PREHEATERS (Airborne
only)
2RA9 EXHAUST ASSEMBLIES
2RA10 STARTERS (Use 2JA3)

CHAPTER 6

CATEGORY 3 - AIRCRAFT PROPELLERS AND ROTORS

6-1 GENERAL.

6-1.1 Category 3 has four major divisions: one for each of the three types of propellers and one for rotor assemblies. TO numbers for propellers use three basic groups. TO numbers for propellers associated equipment use both three and four basic groups.

6-1.2 TO data pertaining to more than one type of propeller assembly control is numbered in the category general series.

6-1.3 Information pertaining to more than one propeller assembly, within one type of propeller control motivation, is numbered in the propeller control general series.

6-2 NUMBERING PATTERNS.

6-2.1 GROUP ONE. This group has three parts identifying the category, type of propeller control and equipment series.

6-2.1.1 Part one is always the numeric 3 that identifies Category 3.

6-2.1.2 Part two identifies the type of aircraft propeller control by using alpha designators, i.e., E - electrical control; H - hydraulic control; and M - mechanical control. Rotor assemblies and equipment are designated by an R identifier in part two. Aircraft propeller associated equipment is identified by adding the alpha character A after the propeller control identifier, i.e., EA, HA, and MA. Rotor assemblies do not have associated equipment identified in the TO system.

6-2.1.3 Part three of this group identifies an equipment series representing further breakout of each type of propeller, its associated equipment and rotor assemblies. A listing of the series numbers is included in paragraph 6-4.

6-2.2 GROUP TWO. TO numbering patterns in Category 3 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both groups:

6-2.2.1 If only three basic groups are used in the numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

6-2.2.2 If the TO number contains four basic groups, the equipment series has been further divided into equipment subseries. In this case the subseries is identified with one or more numeric characters in group two and the model, type or PN is identified in group three.

6-2.3 GROUP THREE.

6-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 3:

- 1 Operating Instructions
- 2 Service or Maintenance Instructions
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

6-2.3.2 In some instances the reserved numbers in the third group are followed by one or more alpha characters indicating a series of checklists, workcards, and supplements. The following alpha characters are authorized for use in Category 3:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

6-2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type, or PN assigned to specific equipment.

6-2.4 GROUP FOUR. In those cases where the TO number has four basic groups, the fourth group identifies specific types of TOs as described in paragraph 6-2.3.1 above.

6-3 EXAMPLES OF CATEGORY 3 NUMBERING PATTERNS.

6-3.1 A general manual entitled List of Props and Governors for Service Aircraft:

- 3-1-1
- 3 Category 3
- 1 Identifies General Instructions
- 1 First In a Series of General Instructions

6-3.2 Operating instructions for a turboprop, model A6441FN-606, for the VC-131 aircraft:

3E3-5-1

3	Category 3
E	Electrically Controlled Prop
3	Turbo-Electric Series
5	Number Assigned to Model A6441FN-606
1	Number Reserved for Operating Instructions

6-3.3 An overhaul instruction for a tail rotor blade, PN 212-010-750-11, for UH-1N helicopter:

3R1-3-6-3

3	Category 3
R	Rotors
1	Rotor Assembly Group Series
3	Tail Blade Subseries
6	Number Assigned to PN 212-010-750-11
3	Number Reserved for Overhaul Instructions

6-4 CATEGORY 3 TECHNICAL ORDER NUMBERING SERIES.

3	AIRCRAFT PROPELLERS AND ROTORS
3E	PROPELLERS, ELECTRICALLY-CONTROLLED
3E3	TURBO-ELECTRIC
3EA	ASSOCIATED EQUIPMENT
3EA1	ALTERNATORS
3EA2	BLADES, CUFFS, PLASTIC FAIRINGS
3EA3	CONTROL SYSTEMS
3EA3-2	Electric Propellers
3EA3-3	Turbo-Electric Propellers
3EA4	DEICING SYSTEMS
3EA5	GOVERNORS
3EA6	HUBS, SPINNERS, POWER UNIT ASSEMBLIES
3EA7	PROPELLER ATTACHMENT ASSEMBLIES
3EA8	SPEED REDUCERS
3EA9	RELAYS
3EA10	SYNCHRONIZERS
3EA11	TIMERS
3EA12	SPEED SETTING ASSEMBLIES

3EA13	COORDINATORS
3EA14	PANEL ASSEMBLIES
3EA15	CHANNEL ASSEMBLIES
3H	PROPELLERS, HYDRAULICALLY-CONTROLLED
3H1	HYDROMATIC
3H3	CONSTANT SPEED (Use 3H1)
3HA	ASSOCIATED EQUIPMENT
3HA1	BLADES AND CUFFS
3HA2	CONTROLS
3HA3	DEICING ASSEMBLIES
3HA3-2	Drum
3HA4	GOVERNORS
3HA4-2	Counterweight Oil
3HA4-3	Hydromatic
3HA4-4	Electronic
3HA4-5	Manual
3HA5	PUMPS
3HA5-2	Anti-Icing
3HA5-3	Feathering
3HA5-4	Integral Oil Control
3HA6	SPINNERS
3HA7	SYNCHRONIZERS
3HA8	TIMERS
3HA9	SWITCH ASSEMBLIES
3HA10	FILTER BOX ASSEMBLIES
3HA11	ALTERNATORS
3HA12	PANEL ASSEMBLIES
3M	PROPELLERS, MECHANICALLY-CONTROLLED
3M1	CONTROLLABLE PITCH
3M2	AUTOMATIC, VARIABLE-PITCH
3M3	FIXED PITCH
3MA	ASSOCIATED EQUIPMENT
3MA1	CONTROL ASSEMBLIES
3R	ROTOR ASSEMBLIES AND EQUIPMENT
3R1	ROTOR ASSEMBLY GROUP
3R1-2	Main Blade
3R1-3	Tail Blade
3R1-4	Rotor Head
3R1-5	Tail Rotor
3R1-6	Main Hub Rotor
3R1-7	Forward Hub Rotor

3R1-8	Aft (Tail) Hub Rotor	3R8	CLUTCH AND FAN ASSEMBLIES
3R2	CONTROLS	3R9	GENERATORS AND DRIVE ASSEMBLIES
3R2-2	Damper	3R10	BRAKE AND DRUM ASSEMBLIES
3R2-3	Limiter	3R11	STATOR ASSEMBLIES
3R2-4	Power Plant	3R12	SHAFT AND HOUSING ASSEMBLIES
3R2-5	Swashplate	3R13	CYLINDERS
3R3	SERVO ASSEMBLIES	3R14	STRUT ASSEMBLIES
3R4	GEAR BOX ASSEMBLIES	3R15	FREEWHEEL UNITS
3R4-2	Main (Central)	3R16	COUPLING ASSEMBLIES
3R4-3	Intermediate	3R17	BLOWERS AND DUCTS
3R4-4	Tail	3R18	RADIATORS
3R4-5	Decreasers, Pumps	3R19	MAST ASSEMBLIES
3R4-6	Nose Gear Box	3R20	SCISSORS
3R4-7	Accessory Gear Box	3R21	HANGARS
3R5	AZIMUTH ASSEMBLIES		
3R6	SLIP RING ASSEMBLIES		
3R7	TRANSMISSIONS		
3R7-2	Main Rotor		
3R7-3	Forward Rotor		
3R7-4	Aft Transmission		

CHAPTER 7

CATEGORY 4 - AIRCRAFT LANDING GEAR

7-1 GENERAL.

7-1.1 Category 4 has five primary landing gear systems. These systems are divided into equipment series and some of the systems are further divided into equipment subseries within each series. The TO numbering pattern for Category 4 uses three basic groups for data identification.

7-1.2 Technical data pertaining to more than one system is numbered in the category general series.

7-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

7-2 NUMBERING PATTERNS.

7-2.1 GROUP ONE. This group has three parts identifying the category, system, and equipment series within the system.

7-2.1.1 Part one is always the numeric 4 identifying Category 4.

7-2.1.2 Part two is an alpha character identifying the landing gear system, i.e., A - landing gear; B - brakes; S - struts; T - tires and tubes; and W - wheels. Associated Equipment for these systems is identified by adding the alpha A immediately following the system identifier, i.e., AA, BA, and SA. Associated Equipment is not appropriate for tires, tubes and wheels systems.

7-2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series is outlined in paragraph 7-4.

7-2.2 GROUP TWO. Although all TO numbers in Category 4 use three basic groups, the identifiers in group two are not constant. The two distinct numbering patterns in use are described below:

7-2.2.1 For certain systems one or more numeric characters in group two represent the model, type or PN assigned to specific components. Systems for which this pattern is used are:

4A	Landing Gear
4AA	Landing Gear Associated Equipment
4BA	Brake System Associated Equipment

4S	Struts, Shock-Absorbing
4SA	Struts Associated Equipment

7-2.2.2 For other systems, group two indicates the equipment series, identified in part three of group one, has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters, and the model, type or PN is identified in group three. Systems for which this pattern is used are:

4B	Brake System
4T	Tires and Tubes, Aircraft
4W	Wheels, Aircraft-Landing-Gear

7-2.3 GROUP THREE.

7-2.3.1 The third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 4:

-1	Operating Instructions
-2	Service or Maintenance Manuals
-3	Depot Maintenance or Overhaul Instructions
-4	Illustrated Parts Breakdown
-6	Inspection Requirements
-7	Installation Instructions
-8	Test procedures, Checkout Manuals, or Programmed Tests

7-2.3.2 In some instances the reserved numbers in the third basic group are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 4:

CL	- Checklists
S	- Operational Supplements
SS	- Safety Supplements
WC	- Workcards

7-2.3.3 When group two identifies the equipment subseries, as described in paragraph 7-2.2.2, group three will indicate the type of TO (reference paragraph 7-2.3.1), and must also represent the model, type or PN assigned to specific components.

7-3 EXAMPLES OF CATEGORY 4 TECHNICAL ORDER NUMBERING PATTERNS.

7-3.1 A Maintenance manual pertaining to main wheels, brakes, and tires for C-12A aircraft (general series):

4-1-102
 4 Category 4
 1 General Series
 102 Maintenance Manual General Series Number

7-3.2 Overhaul instructions with illustrated parts breakdown for a multiple disc brake, PN 2-1179-2, on a C-5A aircraft:

4B1-2-1063
 4 Category 4
 B Brakes
 1 Brake Series
 2 Disc-Type Subseries
 1063 Overhaul Instruction Series and Number Assigned to PN 2-1179-2

7-3.3 Overhaul instructions with illustrated parts breakdown for master brake cylinder PN 12550 on H-43B aircraft:

4BA1-9-13
 4 Category 4
 B Brakes
 A Associated Equipment
 1 Cylinder Series
 9 Number Assigned to PN 12550
 13 Number Reserved for Overhaul Instructions

7-3.4 Overhaul instructions for a nose gear drag brace assembly, PN 65-1390-1 on a KC-135A aircraft:

4SA6-5-3
 4 Category 4
 S Struts
 A Associated Equipment
 6 Brace Assembly Series
 5 Number Assigned to PN 65-1390-1
 3 Number Reserved for Overhaul Instructions

7-3.5 Overhaul instructions with illustrated parts breakdown for main wheel assembly, PN 151522-1, used on F-101B aircraft:

4W1-7-473
 4 Category 4
 W Wheels, Landing-Gear
 1 Main Wheel Series
 7 Type VII (Extra High Pressure) Subseries
 473 Overhaul Instruction Series and Number Assigned to PN 151522-1

7-4 CATEGORY 4 TO NUMBERING SERIES.

4 AIRCRAFT LANDING GEAR
 4A LANDING GEARS
 4A1 FLOAT
 4A2 SKI
 4A3 TRACK
 4A4 WHEEL
 4A5 FLOTATION
 4A6 POSITIONER
 4AA ASSOCIATED EQUIPMENT
 4AA1 SKI
 4B BRAKE SYSTEMS
 4B1 BRAKES
 4B1-2 Disc
 4B1-3 Expander Tube
 4B1-4 Segmented Rotor
 4B1-5 Shoe
 4B1-6 Solid Rotor
 4BA ASSOCIATED EQUIPMENT
 4BA1 CYLINDERS
 4BA2 SKID DETECTORS
 4BA3 RESERVOIRS, HYDRAULIC-BRAKE
 4BA4 VALVES, HYDRAULIC-BRAKE-CONTROL
 4BA5 VALVES, AIR-BRAKE
 4BA6 VALVES, BRAKE-DEBOOST
 4BA7 LINE ASSEMBLIES
 4BA8 CONTROLS
 4BA9 CONTROL SHIELDS
 4BA10 EXPANSION CHAMBERS
 4BA11 TRANSDUCER ASSEMBLIES

4S	STRUTS, SHOCK-ABSORBING	4T2	TUBES
4S1	MAIN LANDING GEAR	4W	WHEELS
4S2	NOSE LANDING GEAR	4W1	MAIN
4S3	TAIL LANDING GEAR	4W1-2	Type I (Smooth Contour)
4S4	OUTRIGGER LANDING GEAR	4W1-3	Type II (High Pressure)
4S5	TAIL SKID LANDING GEAR	4W1-4	Type III (Low Pressure)
4S6	TIP PROTECTION GEAR	4W1-5	Type IV (Extra Low Pressure)
4SA	ASSOCIATED EQUIPMENT	4W1-6	Type VI (Low Profile)
4SA1	DAMPERS, SHIMMY	4W1-7	Type VII (Extra High Pressure)
4SA2	STEERING UNITS AND STEERING DAMPERS	4W1-8	Type VIII (Extra High Pressure)
4SA3	VALVES, HYDRAULIC, NOSE-WHEEL-STEERING	4W2	TAIL
4SA4	BRAKE LINE INSTALLATIONS	4W2-2	Type I (Smooth Contour)
4SA5	CONDUIT INSTALLATIONS	4W2-3	Type II (High Pressure)
4SA6	BRACE ASSEMBLIES	4W2-4	Type III (Low Pressure)
4SA7	VALVES, PNEUMATIC	4W2-5	Type IV (Low Pressure)
4SA8	SPRINGS	4W2-6	Type VI (Low Profile)
4SA9	GENERATORS	4W2-7	Type VII (Extra High Pressure)
4SA10	CARTRIDGES	4W3	NOSE
4T	TIRES AND TUBES, AIRCRAFT	4W3-2	Type I (Smooth Contour)
4T1	TIRES	4W3-3	Type II (High Pressure)
		4W3-4	Type III (Low Pressure)
		4W3-5	Type IV (Extra Low Pressure)
		4W3-6	Type VI (Low Profile)
		4W3-7	Type VII (Extra High Pressure)
		4W3-8	Type VIII (Extra High Pressure)
		4W4	OUTRIGGER
		4W4-2	Type VII (Extra High Pressure)
		4W5	HELICOPTER

CHAPTER 8

CATEGORY 5 - AIRBORNE INSTRUMENTS

8-1 GENERAL.

8-1.1 Category 5 contains seven aircraft and missile instrument systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 5 use both three and four basic groups for data identification. Numbering patterns for both groups are identified in paragraph 8-2.

8-1.2 TO data pertaining to more than one system is numbered in the category general series.

8-1.3 Information pertaining to more than one series within a system is numbered in the system general series.

8-2 NUMBERING PATTERNS.

8-2.1 **GROUP ONE.** This group has three parts identifying the category, system, and equipment series within the system.

8-2.1.1 Part one is always the numeric 5 identifying Category 5.

8-2.1.2 Part two is an alpha character identifying the instrument system, i.e., A - automatic flight control; E - engine instruments; F - flight instruments; L - liquid measuring instruments; M - electric circuit instruments; N - navigation instruments; and P - position and pressure instruments. Flight instruments is the only system that has associated equipment; it is identified by the system identifier FA.

8-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 8-4.

8-2.2 **GROUP TWO.** TO numbering patterns in Category 5 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

8-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

8-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN identified in group three.

8-2.3 **GROUP THREE.**

8-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 5.

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

8-2.3.2 In some instances the reserved numbers in the third group are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 5.

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

8-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PNs assigned to specific component assemblies.

8-2.4 **GROUP FOUR.** If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 8-2.3.1 above.

8-3 EXAMPLES OF CATEGORY 5 NUMBERING PATTERNS.

8-3.1 An overhaul manual for a flight computer, model 562A-5M for VC-137 aircraft:

5A7-3-34-3

5	Category 5
A	Automatic Flight Control System
7	Computer Series
3	Flight Control Computer Subseries
34	Identifies Model 562A-5M
3	Number Reserved for Overhaul Instructions

8-3.2 A maintenance manual, overhaul instructions and illustrated parts breakdown for an acceleration sensor assembly, type TR-272/ASW for F-15 aircraft:

5F25-4-2

5	Category 5
F	Flight Instruments
25	Sensor Unit Series
4	Identifies Type TR-272/ASW
2	Number Reserved for Maintenance Instructions

8-3.3 Overhaul manual with parts breakdown for a liquid quantity transmitter assembly, PN EA 772-GDB, for F-105 aircraft:

5L13-3-18-3

5	Category 5
L	Liquid Measuring Instruments
13	Transmitters
3	Fuel Quantity Transmitter
18	Identifies PN EA 772-GDB
3	Number Reserved for Overhaul Instructions

8-4 CATEGORY 5 NUMBERING SERIES.

5 AIRBORNE INSTRUMENTS

5A AUTOMATIC FLIGHT CONTROL SYSTEMS

5A1 SYSTEM PUBLICATIONS

5A1-2 Autopilot

5A1-3 Remote Flight

5A1-4 Stabilization

5A1-5 Yaw Damper

5A1-6 Inlet Control

5A1-7 Pitch Control

5A1-8 All Weather Landing

5A1-9 Attitude Reference

5A2 ADAPTERS

5A2-2 Amplifier

5A2-3 Rate Gyroscope

5A2-4 Attitude Trim

5A2-5 Phase Adapter

5A2-6 Autopilot

5A2-7 Compass

5A2-8 Flight Director

5A3 AMPLIFIERS

5A4 BOXES

5A4-2 Relay

5A4-3 Junction

5A4-4 Control

5A5 CALIBRATORS

5A6 COMPENSATORS

5A6-2 Airspeed

5A6-3 Altitude

5A6-4 Air Data Scheduler

5A6-5 Mach Trim

5A7 COMPUTERS

5A7-2 Calibration

5A7-3 Flight Control

5A7-4 Amplifier

5A7-5 Flight Director

5A7-6 Angle

5A7-7 Mach

5A8 CONTROLS

5A8-2 Amplifier

5A8-3 Angular Path

5A8-4 Differential Pressure

5A8-5 Directional Gyroscope

5A8-6 Follow up

5A8-7 Formation Stick

5A8-8 Rate Gyroscope

5A8-9 Roll and Pitch

5A8-10 Servo

5A8-11 Three-Axis Gyroscope

5A8-12 Turbo

(Remote Flight)

5A8-13 Vertical Gyroscope

5A8-14 Yaw Damper

5A8-15 Altitude

5A8-16 Computer

5A8-17 Mach Hold

5A8-18 Air Data

5A8-19 Signal

5A8-20 Stability Augmenter

5A8-21 Adapter

5A8-22 Inlet Spike Positioner

5A8-23 Variable Inlet

5A8-24 Monitor

5A8-25 Attitude Reference

5A9 CONTROLLERS

5A9-2 Flight

5A9-3 Remote Pitch

5A9-4 Turn

5A9-5 Turn and Pitch

5A9-6 Altitude

5A9-7	Power	5A17-6	Transfer
5A9-8	Selector	5A17-7	Clutch
5A9-9	Engaging	5A17-8	Interrupter
5A10	FILTERS	5A17-9	Solenoid
5A10-2	Oil	5A17-10	Scheduling
5A10-3	Gyroscope	5A17-11	Force
5A11	GYROSCOPES	5A18	TRANSMITTERS
5A11-2	Rate	5A19	VIBRATORS
5A11-3	Vertical	5A20	MOUNTS AND RACKS
5A11-4	Directional	5A21	POWER SUPPLIES
5A11-5	Attitude	5A22	SENSORS
5A11-6	Integrating	5A22-2	Vertical
5A11-7	Displacement	5A22-3	Angle of Attack
5A12	INDICATORS	5A22-4	Wing Sweep
5A12-2	Direction	5A22-5	Airspeed
5A12-3	Trim	5A23	TRANSDUCERS
5A12-4	Attitude	5A23-2	Pressure
5A12-5	Flight	5A23-3	Altitude
5A12-6	Distance	5A23-4	Pitch
5A12-7	Attitude (Use 5A12-4)	5A24	ACCELEROMETERS
5A13	PANELS AND FRAMES	5A24-2	Linear and Lateral
5A13-2	Directional	5A24-3	Limiting
5A13-3	Function Selector	5A25	CIRCUITS
5A13-4	Servo Cutout Switch	5A25-2	Differential
5A13-5	Control	5A26	VALVES
5A13-6	Relay	5A26-2	Shutoff
5A13-7	Adjustment	5A26-3	Purge
5A13-8	Damper	5A26-4	Transfer
5A13-9	Engage	5A26-5	Check
5A14	SERVOS	5A26-6	Control
5A14-2	Electromechanical	5A26-7	Selector (Do not use)
5A14-3	Hydraulic	5A27	DEMODULATORS AND MODULATORS
5A14-4	Transmitter	5A28	COUPLERS
5A14-5	Central Gyroscope Reference System	5A29	COMPARATORS (See 5A3)
5A15	SERVO MECHANISMS	5A30	POTENTIOMETERS
5A15-2	Drum and Bracket Assembly	5A31	STOP ASSEMBLIES
5A15-3	Motor and Drive Assembly	5A32	UNITS
5A15-4	Disconnect Clutch Assembly	5A32-2	Gyroscope and Accelerometer
5A15-5	Throttle	5A32-3	Reference
5A15-6	Disconnect	5A32-4	Parameter
5A15-7	Friction Release Hub Assembly	5A32-5	Self-Test and Monitor
5A15-8	Altitude	5A32-6	Interface
5A15-9	Flight Control	5A33	LINKAGE ASSEMBLIES
5A15-10	Course Repeater	5A33-2	Power Control
5A15-11	Positioner	5A34	DRIVE UNITS
5A16	STABILIZERS	5A35	GENERATORS (Use Category 8)
5A16-2	Directional		
5A17	SWITCHES		
5A17-2	Differential Pressure		
5A17-3	Engaging (Automatic Approach)		
5A17-4	Limit		
5A17-5	Selector		

5A36	MEMORY ASSEMBLIES (Do not use)	5E14	THROTTLES
5A37	RELAYS (Use 8R)	5E15	REGULATORS
5A38	SYNCHRONIZERS	5E15-2	Pressure
5A39	CYLINDERS	5E16	POWER UNITS
5A40	DETECTORS	5E17	CONVERTERS
5A41	CONVERTERS	5E18	PROCESSORS
5A42	PLATFORMS	5E19	DISPLAY UNITS
5A43	CLUTCH PACKS	5E19-2	Umbilical
5A44	ACTUATORS	5E19-3	Multi-Integrated
5A45	TRANSFORMERS	5F	FLIGHT INSTRUMENTS
5A46	PROCESSORS	5F1	SYSTEMS
5A46-2	Signal Data	5F1-2	Flight Computer
5A47	DISTANCE MEASURING EQUIPMENT	5F1-3	Gyroscope
5A48	DESENSITIZERS	5F1-4	Flight Control
5E	ENGINE AND TEMPERATURE INSTRUMENTS	5F1-5	Flight Directional
5E1	SYSTEMS PUBLICATIONS	5F1-6	Navigation (Use 5N)
5E1-2	Engine Analyzer	5F1-7	Data Recording
5E2	ADAPTERS	5F2	ACCELEROMETERS
5E3	AMPLIFIERS	5F3	ALTIMETERS
5E4	GAUGES	5F3-2	Density
5E5	GENERATORS	5F3-3	Pressure
5E5-2	Propeller Synchronizer	5F3-4	Sensitive
5E5-3	Tachometer	5F4	AMPLIFIERS
5E6	INDICATORS	5F5	COMPUTERS
5E6-2	Tachometer	5F5-2	Angle of Attack
5E6-3	Temperature	5F5-3	True Airspeed
5E6-4	Pressure (See 5P3-4)	5F5-4	Air Data
5E6-5	Thrust	5F5-5	Steering
5E6-6	Torque	5F5-6	Gyroscope Rate
5E6-7	Jet Nozzle	5F5-7	Quadratic Arc
5E6-8	Discharge (Carbon Dioxide)	5F5-8	Flight Director
5E6-9	Gas Generator	5F5-9	Lift
5E6-10	Cruise Guide	5F5-10	Stall Prevention
5E6-11	Dual	5F5-11	Maximum Hover Weight
5E7	SHAFTS	5F5-12	Landing Gear
5E8	SYNCHROSCOPES	5F5-13	Flight Control
5E9	COUNTERS	5F6	CONTROLS
5E10	THERMOCOUPLES	5F6-2	Flight Computer
5E11	RECORDERS	5F6-3	Vertical Gyroscope
5E12	TRANSMITTERS	5F6-4	Rate Gyroscope
5E13	THERMOSTATS	5F6-5	Stability
		5F6-6	Box Assembly
		5F6-7	Inertial Navigator
		5F6-8	Position
		5F7	FILTERS
		5F7-2	Air
		5F8	INDICATORS
		5F8-2	Airspeed
		5F8-3	Attitude Gyroscope
		5F8-4	Bank and Turn (Turn and Slip)
		5F8-5	Directional Gyroscope

5F8-6	Flight Computer	5F21	MONITORS
5F8-7	Gyroscope Horizon	5F22	UNITS AND ASSEMBLIES
5F8-8	Machmeter	5F23	RECORDERS AND TAPE UNITS
5F8-9	Rate of Climb	5F23-2	Tape Unit
5F8-10	Vertical Gyroscope	5F23-3	Recorder
5F8-11	Pilot Directional	5F24	INDEXERS
5F8-12	Dive and Roll	5F25	SENSORS
5F8-13	Horizon Approach	5F26	COUNTERS
5F8-14	Course	5F27	MULTIPLEXERS
5F8-15	Ground Speed	5F28	CONTROLLERS
5F8-16	Horizontal Situation	5F29	MODULES
5F8-17	Position	5F30	PRINTERS
5F8-18	Tachometer	5F31	DISPLAY UNITS
5F8-19	Angle of Attack	5FA	ASSOCIATED EQUIPMENT
5F8-20	Cabin Altitude	5FA1	COUPLERS
5F8-21	Warning	5FA2	CHASSIS ASSEMBLIES
5F8-22	Vertical Situation	5FA3	POWER SUPPLIES
5F9	SWITCHES	5FA4	LOGIC CARDS
5F9-2	Selector	5L	LIQUID-LEVEL, QUANTITY, AND FLOW MEASURING INSTRUMENTS
5F10	TRANSMITTERS	5L1	SYSTEMS
5F10-2	True Airspeed	5L1-2	Fuel Level
5F10-3	Altitude	5L1-3	Fuel Quantity
5F10-4	Angle of Attack and Rate Gyroscope	5L2	AMPLIFIERS
5F10-5	Accelerometer	5L2-2	Fuel Flowmeter
5F10-6	Synchronizer	5L2-3	Fuel Quantity
5F10-7	Asymmetry	5L3	BOXES
5F10-8	Position	5L3-2	Control
5F11	TUBES	5L3-3	Fuel Quantity
5F11-2	Pitot Static	5L4	CALIBRATORS
5F11-3	Power Venturi	5L4-2	Bridge
5F12	TRANSDUCERS	5L5	COMPENSATORS
5F12-2	Wind Direction	5L5-2	Voltage
5F12-3	Mach Number	5L6	INDICATORS
5F12-4	Angle of Attack	5L6-2	Fuel Flow
5F12-5	Lift	5L6-3	Fuel Quantity
5F12-6	Altitude	5L6-4	Liquid Level
5F12-7	Augmentor	5L7	PANELS
5F12-8	Flap Position	5L7-2	Stroke Adjustment
5F13	PROBES	5L7-3	Control
5F13-2	Temperature	5L8	MOUNTS AND RACKS
5F13-3	Local Mach	5L8-2	Bridge Calibrator
5F14	CONVERTERS	5L8-3	Power Unit
5F14-2	Air Data	5L9	RELAYS
5F15	SETS		
5F15-2	Accessory		
5F16	TRACK KEEPERS		
5F17	INSTRUMENT GUIDANCE (Do not use)		
5F18	COMPENSATORS		
5F18-2	Central Air Data		
5F19	SHAKER ASSEMBLIES		
5F20	DETECTORS		

5L9-2	Transfer Tank Unit	5M2-2	Control Panel
5L10	SIMULATORS	5M3	GENERATORS
5L11	SUMMATORS	5M3-2	Impulse
5L12	SWITCHES	5N	NAVIGATION INSTRUMENTS
5L12-2	Densitometer	5N1	SYSTEMS
5L12-3	Float Operated	5N1-2	Compass
5L12-4	Relay and Transfer	5N1-3	Computer
5L12-5	Potentiometer	5N1-4	Navigator Unit
5L13	TRANSMITTERS	5N1-5	Display
5L13-2	Fuel Flow	5N2	AMPLIFIERS
5L13-3	Fuel Quantity	5N2-2	Compass
5L13-4	Liquid Level	5N2-3	Electronic Control
5L14	UNITS	5N2-4	Power Supply
5L14-2	Power	5N2-5	Navigational Computer
5L14-3	Tank	5N3	COMPASSES
5L14-4	Totalizer Bridge	5N3-2	Astro
5L14-5	Totalizer Assembly	5N3-3	Magnetic (Direct Reading)
5L14-6	Control	5N4	COMPENSATORS
5L14-7	Sensing	5N4-2	Quadrantal Error
5L14-8	Ratio	5N4-3	Synchronizer
5L15	NETWORKS	5N4-4	Magnetic
5L15-2	Time Delay	5N4-5	Thin
5L16	CONTROLS	5N4-6	Detector
5L17	GAUGES	5N5	COMPUTERS
5L18	COMPUTERS	5N5-2	Altitude Correction
5L19	REGULATORS	5N5-3	Course and Distance
5L20	METERS	5N5-4	Dead Reckoning
5L21	COUNTERS	5N5-5	Time and Distance
5L22	DETECTORS	5N5-6	True Airspeed
5L23	CONDENSORS (CAPACITORS)	5N5-7	Programmer
5M	ELECTRICAL CIRCUIT INSTRUMENTS	5N5-8	Latitude and Longitude
5M1	METERS	5N5-9	Wind Drift
5M1-2	Ammeter	5N5-10	Radiation
5M1-3	Frequency	5N5-11	Tracking
5M1-4	Voltmeter	5N5-12	Meteorological
5M1-5	Wattmeter	5N5-13	Navigation
5M1-6	Steering	5N5-14	Performance
5M1-7	Time	5N5-15	Ballistic
5M1-8	Multimeter	5N5-16	Flare
5M1-9	Arbitrary Scale	5N5-17	Rotation
5M1-10	Audio Level	5N5-18	Position
5M1-11	Antenna	5N5-19	Digital
5M1-12	Phase (Time)	5N6	CONTROLS
5M1-13	Velocity	5N6-2	Directional Gyroscope
5M1-14	Factor	5N6-3	Slaving
5M1-15	Fuel Pressure	5N6-4	Computer
5M1-16	Galvanometer	5N6-5	Stability
5M2	INDICATORS	5N6-6	Indicator
		5N6-7	Alignment
		5N6-8	Compass, Control Unit
		5N6-9	Navigational
		5N6-10	Designator
		5N7	DRIFTMETERS
		5N7-2	Gyroscope Stabilized
		5N7-3	Nonstabilized

5N8	INDICATORS	5N22	COUNTERS
5N8-2	Director	5N23	DETECTORS
5N8-3	Compass (Master Direction)	5N24	PLATFORMS
5N8-4	Compass (Repeater)	5N25	SELECTORS
5N8-5	Course (See 12R5)	5N26	INVERTERS
5N8-6	Radio Converter (See 12R5)	5N27	ENCODERS
5N8-7	Radio (See 12R5)	5N28	MODULES
5N8-8	Latitude and Longitude	5N29	DISPLAY SETS
5N8-9	Wind Direction	5N30	CONVERTERS
5N8-10	Horizontal Display	5N31	PROCESSORS
5N8-11	Vertical, Velocity	5N32	SIGHTS
5N8-12	Analog Display	5N33	DEHYDRATORS
5N8-13	Digital Data	5N34	MONITORS
5N8-14	Drift	5N35	GIMBAL ASSEMBLIES
5N8-15	Temperature	5P	POSITION AND PRESSURE INSTRUMENTS
5N8-16	Navigation Control	5P1	AMPLIFIERS
5N9	ACCELEROMETERS	5P1-2	Audio
5N10	SEXTANTS AND MOUNTS	5P1-3	Servo
5N10-2	Hand Held	5P1-4	Engine
5N10-3	Periscopic	5P1-5	Computer
5N10-4	Horizon	5P2	GAUGES
5N10-5	Mount, Periscopic	5P2-2	Pressure
5N10-6	Mount, Horizon	5P2-3	Suction
5N10-7	Celestial	5P3	INDICATORS
5N11	TIME PIECES	5P3-2	Air Flow, Cabin Pressure
5N11-2	Clock	5P3-3	Position
5N11-3	Watch	5P3-4	Pressure
5N11-4	Chronometer	5P4	TRANSDUCERS
5N12	TRANSMITTERS	5P4-2	Pressure
5N12-2	Compass	5P5	TRANSMITTERS
5N12-3	Wind Direction	5P5-2	Position
5N12-4	Temperature	5P5-3	Pressure
5N13	STABILIZERS	5P6	PRESSURE RATIO SYSTEMS
5N13-2	Binocular	5P7	CONTROLS
5N14	PANELS	5P7-2	Pressure
5N14-2	Display	5P7-3	Position
5N14-3	Control	5P8	COMPENSATORS
5N14-4	Manual Set	5P8-2	Static Pressure and Angle of Attack
5N15	TRACKERS	5P9	SELECTORS
5N15-2	Astro	5P9-2	Pressure
5N16	UNITS	5P10	SENSORS
5N16-2	Power Supply	5P10-2	Flow
5N16-3	Inertial Measuring	5P10-3	Pressure
5N16-4	Distribution		
5N17	BOXES		
5N17-2	Junction		
5N17-3	Distribution		
5N18	GYROSCOPES		
5N19	ADAPTERS		
5N20	COUPLERS		
5N21	ISOLATORS		

CHAPTER 9

CATEGORY 6 - AIRCRAFT AND MISSILE FUEL SYSTEMS

9-1 GENERAL.

9-1.1 Category 6 has six primary aircraft and missile fuel systems. These systems are divided into equipment series and further divided into equipment subseries within each equipment series. TO numbers in Category 6 will use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 9-2.

9-1.2 TO data pertaining to more than one system is numbered in the category general series.

9-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

9-2 NUMBERING PATTERNS.

9-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

9-2.1.1 Part one is always the numeric 6 identifying Category 6.

9-2.1.2 Part two is an alpha character which identifies the fuel system, i.e., A - air refueling; J - aircraft and missile jet engine fuel systems; K - rocket engine fuel systems; P - purging system; R - reciprocating engine fuel systems; and S - offensive systems. There is no associated equipment identified in this category.

9-2.1.3 Part three contains one or more numeric characters that identify an equipment series within a system. The TO numbering series is outlined in paragraph 9-4.

9-2.2 GROUP TWO. TO numbering patterns in Category 6 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

9-2.2.1 If the TO number uses only three groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

9-2.2.2 If the TO number contains four groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

9-2.3 GROUP THREE.

9-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 6:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

9-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 6:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

9-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific component assemblies.

9-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 9-2.3.1 above.

9-3 EXAMPLES OF CATEGORY 6 NUMBERING PATTERNS.

9-3.1 Overhaul instructions with parts break-down for a fuel filter assembly, PN 52-2145-002, for H-43B helicopter:

6R2-19-3

6	Category 6
R	Reciprocating Engine Fuel System
2	Filter and Strainer Series
19	Identifies PN 52-2145-002
3	Number Reserved for Overhaul Instructions

9-3.2 Overhaul instructions for a motor operated gate valve, PN AV16V1830D for KC-135A aircraft:

6A9-2-12-3

6	Category 6
A	Air Refueling System
9	Valve Series
2	Control Valve Subseries
12	Identifies PN AV16V1830D
3	Number Reserved for Overhaul Instructions

9-3.3 Section one of two sections of overhaul instructions for main fuel control, Bendix PN 440955, on F-100 engine:

6J3-4-97-3-1

6	Category 6
J	Jet and Turbojet Engine and Aircraft
3	Fuel Control Series
4	Main Fuel Control Subseries
97	Identifies Bendix PN 440955
3	Number Reserved for Overhaul Instructions
1	Identifies Section One

9-4 CATEGORY 6 NUMBERING SERIES.

6	AIRCRAFT AND MISSILE FUEL SYSTEMS
6A	AIR REFUELING SYSTEMS
6A1	ACTUATORS
6A1-2	Hydraulic
6A2	AMPLIFIERS (Use 8D or 8A)
6A3	BOOM ASSEMBLIES
6A4	INDICATORS
6A5	NOZZLE ASSEMBLIES
6A6	RECEPTACLE ASSEMBLIES

6A7	STATIC DISCONNECTOR ASSEMBLIES
6A8	HOSE REEL ASSEMBLIES
6A9	VALVES
6A9-2	Control
6A9-3	Relief
6A9-4	Float
6A9-5	Selector
6A9-6	Check
6A9-7	Regulator
6A9-8	Shutoff
6A9-9	Adapter
6A9-10	Response
6A10	PUMPS
6A10-2	Fuel Transfer
6A11	TRANSMITTERS
6A12	RECOIL ASSEMBLIES
6A13	DRIVE UNITS
6A14	SUPPRESSOR ASSEMBLIES
6A15	COUPLINGS
6A16	BUNGEE ASSEMBLIES
6A17	ADAPTERS
6A18	PROBES
6A19	SELECTORS
6A20	CYLINDERS
6A21	DROGUES
6A22	THERMISTORS
6J	AIRCRAFT AND MISSILE ENGINE FUEL SYSTEMS - TURBOJET AND TURBOPROP
6J1	AMPLIFIERS
6J1-2	Main System
6J1-3	Afterburner System
6J2	BAROMETRIC ASSEMBLIES
6J3	FUEL CONTROLS
6J3-2	Afterburner
6J3-3	Emergency
6J3-4	Main
6J3-5	Starting
6J3-6	Speed Limiter
6J3-7	Valve
6J3-8	Nozzle and Actuator
6J4	QUICK DISCONNECT COUPLINGS
6J5	FILTERS AND STRAINERS
6J6	(Not Used)
6J7	GOVERNORS

6J8	NOZZLES	6J20-2	Internal
6J9	PRIMER AND IGNITER ASSEMBLIES	6J21	LIMITERS
		6J21-2	Acceleration
6J10	PUMPS, FUEL AND WATER	6J22	COOLERS (Heat Exchangers)
6J10-2	Air Driven Turbine	6J23	MISSILE PLUMBING, FUEL
6J10-3	Electric Motor Driven	6J23-2	Restrictor
6J10-4	Engine Driven	6J24	HEATERS
6J10-5	Hydraulic Motor Operated	6J25	ACCUMULATORS
6J11	REGULATORS, FUEL AND WATER	6J26	DETECTORS
6J12	SERVICING UNITS AND ADAPTERS	6J27	CYLINDERS
6J13	SWITCHES (Do Not Use)	6J28	MANIFOLDS
6J14	TANKS	6J29	ACTUATOR ASSEMBLIES
6J14-2	Jettisonable Type	6K	ROCKET ENGINE FUEL SYSTEMS
6J14-3	Pylon	6K1	VALVES
6J14-4	Fixed	6K1-2	Control
6J14-5	Auxiliary	6K1-3	Drain
6J14-6	Ethylene Oxide (Missile)	6K1-4	Shutoff
6J14-7	Internal	6K1-5	Relief, Vent
6J15	VALVES, FUEL AND WATER	6K1-6	Disconnect
6J15-2	Check (See 6R9-2 also)	6K2	GENERATOR ASSEMBLIES
6J15-3	Control (See 6R9-3 also)	6K2-2	Gas
6J15-4	Drain (See 6R9-4 also)	6K3	GIMBAL AND MOUNT ASSEMBLIES
6J15-5	Float (See 6R9-5 also)	6K3-2	Thrust Chamber
6J15-6	Metering	6K4	SWIVEL ASSEMBLIES
6J15-7	Pressure Regulator (See 6R9-7)	6K4-2	Mechanical
6J15-8	Relief and Vent (See 6R9-8 also)	6K5	THRUST CHAMBER ASSEMBLIES
6J15-9	Selector (See 6R9-9 also)	6K5-2	Boost Rocket
6J15-10	Shutoff (See 6R9-10 also)	6K6	REGULATORS
6J15-11	Stopcock	6K6-2	Pressure
6J15-12	Flow Divider	6K7	COUPLINGS AND DISCONNECTS
6J15-13	Fuel Flow Equalizer	6K7-2	Couplings
6J15-14	Pressurizing	6K8	PUMP ASSEMBLIES
6J15-15	By-Pass	6K8-2	Turbo
6J15-16	Breakaway	6K9	INITIATORS
6J15-17	Slide	6K10	NOZZLE ASSEMBLIES
6J15-18	Fuel Flow Interconnect	6K11	ADAPTERS
6J15-19	Screen	6K12	ACTUATOR ASSEMBLIES
6J15-20	Bleed	6K13	PROBE ASSEMBLIES
6J15-21	Transfer	6P	PURGING SYSTEMS
6J16	TRANSMITTERS, FUEL AND WATER	6P1	NITROGEN VALVES
6J16-2	Pressure	6P1-2	Check Nitrogen
6J17	COOLERS	6P1-3	Pressure Regulating
6J17-2	Clycol, Radiator, (See 7J1-17)	6P1-4	Relief Nitrogen
6J18	CAPS, FUEL AND WATER	6P1-5	Control
6J18-2	Fuel Tank		
6J19	EJECTORS		
6J19-2	Gun		
6J19-3	Fuel		
6J20	FUEL CELLS		

6P1-6	Shutoff	6R8	TANKS
6P2	GENERATOR PACKAGES	6R8-2	Jettisonable
6P2-2	Purge Gas	6R9	VALVES
6P3	CONTROLLERS	6R9-2	Check
6P3-2	Fuel Air Ratio	6R9-3	Control
6P4	PUMPS	6R9-4	Drain
6R	AIRCRAFT RECIPROCATING ENGINE FUEL SYSTEMS	6R9-5	Float
6R1	CARBURETORS	6R9-6	Metering
6R1-2	Float	6R9-7	Pressure Regulating
6R1-3	Injection	6R9-8	Vent, Relief
6R1-4	Variable Venturi	6R9-9	Selector
6R2	FILTERS AND STRAINERS	6R9-10	Shutoff
6R3	INJECTION SYSTEMS	6R9-11	Coupling, Quick-Disconnect
6R4	FUEL INJECTION	6R9-12	Slide
6R5	PUMPS, FUEL- AND WATER-	6R9-13	Swivel
6R5-2	Electric Motor Driven	6R9-14	Dump
6R5-3	Engine Driven	6R9-15	Flow Divider
6R5-4	Injection	6R9-16	Gate
6R5-5	Hand Operated	6R10	PRIMER AND IGNITER ASSEMBLIES
6R5-6	Hydraulic Motor Operated	6R11	AMPLIFIERS
6R6	REGULATORS	6S	OFFENSIVE SYSTEMS
6R6-2	Fuel	6S1	SYSTEMS
6R6-3	Water	6S2	VALVES
6R7	SWITCHES (See Category 8)	6S3	CYLINDERS
		6S4	CHAMBERS

CHAPTER 10

CATEGORY 7 - AIRBORNE ENGINE LUBRICATING SYSTEMS

10-1 GENERAL.

10-1.1 Category 7 has only two systems relating to airborne engine lubrication. These two systems are divided into equipment series and then further divided into equipment subseries within each equipment series. TO numbers in Category 7 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 10-2.

10-1.2 TO data pertaining to more than one system is numbered in the category general series.

10-1.3 Information involving more than one equipment series within a system is numbered in the system general series.

10-2 NUMBERING PATTERN.

10-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series within the system.

10-2.1.1 Part one is always the numeric 7 identifying Category 7.

10-2.1.2 Part two is an alpha character that identifies the lubrication system. These alpha characters are: J - jet engine lubricating systems, or R - reciprocating engine lubricating systems. There is no associated equipment identified in this category.

10-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 10-4.

10-2.2 **GROUP TWO.** TO numbering patterns in Category 7 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

10-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

10-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

10-2.3 **GROUP THREE.**

10-2.3.1 If the TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 7.

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

10-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 7:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

10-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific component assemblies.

10-2.4 **GROUP FOUR.** If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 10-2.3.1, above.

10-3 EXAMPLES OF CATEGORY 7 NUMBERING PATTERNS.

10-3.1 Depot maintenance instructions with illustrated parts breakdown for a transmission fluid cooler, PN 215-55302-1 for A7D aircraft jet engine:

7J1-65-3	
7	Category 7
J	Jet Engine Lubrication System
1	Cooler Series
65	Identifies PN 215-55302-1
3	Number Reserved for Depot Maintenance Instructions

10-3.2 Checkout and service instructions for a temperature control valve, PN 154605-1-1, for C-141 aircraft jet engine:

7J6-10-10-2

7	Category 7
J	Jet Engine Lubrication Systems
6	Valve Series
10	Relief Valve Subseries
10	Identifies PN 154605-1-1
2	Number Reserved for Service Instructions

10-3.3 Overhaul instructions with illustrated parts breakdown for oil separator assembly, PN 1545-4-E for C-121C aircraft reciprocating engine:

7R6-2-13

7	Category 7
R	Reciprocating Engine Lubrication System
6	Separator Series
2	Identifies PN 1545-4-E
13	Number Reserved for Overhaul Instructions

10-4 CATEGORY 7 NUMBERING SERIES.

7 AIRBORNE ENGINE LUBRICATING SYSTEMS

7J JET ENGINE LUBRICATING SYSTEMS

7J1 COOLERS

7J2 FILTERS

7J3 HEATERS

7J4 PUMPS

7J4-2 Lube, Scavenge

7J4-3 Transfer

7J4-4 Lubricator

7J5 REGULATORS

7J5-2 Oil Temperature

7J5-3 Pressure

7J6 VALVES

7J6-2 Check (See 7J6-8)

7J6-3 Diverter

7J6-4 Flow Divider

7J6-5 Shutoff

7J6-6 Control

7J6-7 Pressurizing

7J6-8 Check

7J6-9 Drain

7J6-10 Relief

7J6-11 Selector

7J7 THERMOSTATS

7J8 SOCKET ASSEMBLIES

7J9 AMPLIFIERS

7J10 TANKS

7J11 INDICATORS

7J12 NIPPLE ASSEMBLIES

7J12-2 Oil

7J13 TRANSDUCERS

7J14 SENSORS

7J15 FAN ASSEMBLIES

7R RECIPROCATING ENGINE LUBRICATING SYSTEMS

7R1 COOLERS

7R1-3 Oil Coolers

7R2 FILTERS

7R3 HEATERS

7R4 PUMPS, RECIPROCATING-ENGINES

7R4-2 Hydraulic Gear

7R4-3 Transfer

7R5 REGULATORS

7R6 SEPARATORS

7R7 THERMOSTATS

7R8 VALVES

7R8-3 Control

7R8-5 Drain

7R8-7 Selector

7R8-8 Sequence

7R8-9 Shutoff

7R6-10 Diverter Segregator

7R8-12 By-Pass

7R9 SOCKET ASSEMBLIES

7R10 FANS

CHAPTER 11

CATEGORY 8 - AIRBORNE ELECTRICAL SYSTEMS

11-1 GENERAL.

11-1.1 Category 8 contains six airborne electrical systems. These systems are divided into equipment subseries within each equipment series. Therefore TO numbers in Category 8 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 11-2.

11-1.2 TO data pertaining to more than one system is numbered in the category general series.

11-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

11-2 NUMBERING PATTERNS.

11-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

11-2.1.1 Part one is always the numeric 8 identifying Category 8.

11-2.1.2 Part two is an alpha character identifying the electrical system, i.e., A - alternating current electrical equipment; C - combination of both alternating and direct current electrical equipment; D - direct current electrical equipment; E - ignition systems; R - relays; and S - switches.

11-2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series is outlined in paragraph 11-4.

11-2.2 GROUP TWO. Since TO numbering patterns in Category 8 use both three and four basic groups, the identifiers in group two are not constant. The following explains the numbering patterns for both groups:

11-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

11-2.2.2 If the TO number contains four basic groups, the equipment series identified in group one, part three, has been divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

11-2.3 GROUP THREE.

11-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 8:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

11-2.3.2 In some instances, the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 8:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

11-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific equipment and the specific types of TOs are then identified in group four.

11-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 11-2.3.1.

11-3 EXAMPLES OF CATEGORY 8 NUMBERING PATTERNS.

11-3.1 Operating and maintenance instructions with illustrated parts breakdown for an alternating current electric motor, PN 6818-1, applicable to a pump installation on C-119 aircraft:

8A1-15-35-1	
8	Category 8
A	Alternating Current
1	Actuator and Motor Series
15	Pump Subseries
35	Identifies PN 6818-1
1	Number Reserved for Operating Instructions

11-3.2 A field maintenance instruction for a combination alternating/direct current inverter, PN F15-2M, for H-19A helicopter:

8C7-2-5-2

8	Category 8
C	Alternating/Direct Current
7	Motor Generator (Inverter) Series
2	1-250 Volt Ampere Subseries
5	Identifies PN F15-2M
2	Number Reserved for Field Maintenance

11-3.3 Overhaul instruction with parts breakdown for a fuel float switch assembly, PN F-7860 for a B-52 aircraft:

8S1-2-24-3

8	Category 8
S	Switches
1	Float Switch Series
2	Fuel Float Switch Subseries
24	Identifies PN F-7860
3	Number Reserved for Overhaul Manuals

11-4 CATEGORY 8 NUMBERING SERIES.

8 AIRBORNE ELECTRICAL SYSTEMS

8A ALTERNATING-CURRENT

8A1 ACTUATORS AND MOTORS

8A1-2	Bomb Bay Door
8A1-3	Camera Door
8A1-4	Magnetron
8A1-5	Cowl Flap and Air Plug
8A1-6	Tachometer (See 8A1-28)
8A1-7	Wing Flap, Dive Flap
8A1-8	Trim Tab, Boost
8A1-9	Oil Cooler, Inter-Cooler
8A1-10	Carburetor Air
8A1-11	Cockpit Heat and Vent
8A1-12	Anti-Ice, De-Ice
8A1-13	Engine, Prop Control
8A1-14	Valve
8A1-15	Pump
8A1-16	Radome Retract
8A1-17	Fan, Blower
8A1-18	Windshield Wiper
8A1-19	Compressor
8A1-20	Tip Tank, Jato Release
8A1-21	Fractional Horsepower
8A1-22	Integral Horsepower
8A1-23	Air Inlet Door, Screen
8A1-24	Nose Turret Empty Disposal
8A1-25	Regulating
8A1-26	Seat Control

8A1-27	Navigational
8A1-28	Generator, Tachometer
8A1-29	Heater
8A1-30	Hoist
8A1-31	Selector Door
8A1-32	Transmitter
8A1-33	Radar
8A1-34	Throttle
8A1-35	Antenna
8A1-36	Ram Air
8A1-37	Wingfold
8A1-35	Photographic Equipment
8A1-39	Switch
8A1-40	Autopilot
8A1-41	Spike Positioning
8A1-42	Pitot Tube
8A1-43	Turret Drive
8A1-44	Potentiometer
8A1-45	Training Equipment
8A1-46	Radio
8A1-47	Computer
8A1-48	Gearhead
8A1-49	Inflight Printer, Control
8A1-50	Test Set
8A1-51	Rudder
8A1-52	Transmission
8A1-53	Stabilizer
8A1-54	Launch Gear
8A1-55	Guidance
8A1-56	Lights
8A1-57	Ammunition Booster, Gunnery
8A1-58	Cryptographic Equipment
8A1-59	TV Viewfinder
8A1-60	Launcher, Guided-Missile (See 35M)
8A1-61	Engine Temperature Control
8A1-62	Driftmeter Fairing
8A1-63	Pressurization Unit
8A1-64	Indicator
8A1-65	Amplifier
8A1-66	Fire Control
8A1-67	Controlled Line Platform
8A1-68	Escape Capsule
8A1-69	Electronic Countermeasure
8A1-70	Lights (See 8A1-56)
8A1-71	Flare Ejection
8A1-72	Servo
8A1-73	Control
8A1-74	Timer
8A1-75	Recorder
8A1-76	Ramp
8A1-77	Plumbing
8A1-78	Drive (See 8A1-43)
8A1-79	Static Line Cable
8A1-80	Air Exit Door
8A1-81	Landing Gear
8A1-82	Shaker Assembly
8A1-83	Filter

8A1-84	Linear	8A10-3	Taxi
8A2	POWER SUPPLIES	8A10-4	Inter-Aircraft
8A3	CONTROLLERS	8A10-5	Fluorescent Lights, Related Equipment
8A3-2	Trim Tab	8A10-6	Flasher
8A3-3	Afterburner	8A10-7	Vibrator Pack
8A3-4	Starter	8A10-8	Anti-Collision
8A3-5	Generator	8A10-9	Display
8A3-6	Wing Flap	8A10-10	Warning, Dimming Control
8A3-7	Flasher	8A11	POWER SUPPLIES (See 8A2)
8A3-8	Timer	8A12	STARTERS
8A3-9	Temperature	8A12-2	Combination Inertia - Direct Crank
8A3-10	Oil Cooler	8A12-3	Direct Crank
8A3-11	Calibration	8A13	STARTER GENERATORS
8A3-12	Rudder	8A13-2	1-100 amps
8A3-13	Frequency and Load	8A13-3	101-200 amps
8A3-14	Steering	8A13-4	201-300 amps
8A3-15	Air Inlet	8A13-5	301-400 amps
8A3-16	Paralleling	8A14	TRANSFORMER RECTIFIERS
8A3-17	Warning Device	8A15	WARNING DEVICES
8A3-18	Panel	8A15-2	Audible Signal
8A3-19	Winch and Hoist	8A15-3	(Do not use)
8A4	CONNECTORS, PLUGS, ETC.	8A15-4	Fuel, Water Pressure
8A4-2	Mounting Rack and Tray	8A15-5	Stall Warning
8A4-3	Contactors	8A16	VOLTAGE REGULATORS
8A5	DYNAMOTORS	8A17	SUPPRESSOR ASSEMBLIES
8A5-2	0-100 MA	8A18	EJECTORS
8A5-3	101-200 MA	8A19	TRANSFORMERS
8A5-4	201-300 MA	8A20	AMPLIFIERS
8A5-5	301-400 MA	8A21	FANS AND BLOWERS
8A6	GENERATORS (ENGINE DRIVEN)	8A22	TRANSMITTERS
8A6-2	0-1 KVA	8A23	CABLES
8A6-3	2-7 KVA	8A24	BOXES
8A6-4	8-9 KVA	8A24-2	Distribution
8A6-5	10-15 KVA	8A24-3	Junction
8A6-6	16-20 KVA	8A24-4	Control
8A6-7	21-30 KVA	8A25	PANELS - POWER DISTRIBUTION
8A6-8	31-40 KVA	8A26	INDICATORS
8A6-9	41-60 KVA	8A27	POWER MONITORS
8A6-10	61-120 KVA	8A28	ELECTROMAGNETIC UNITS
8A7	MOTOR GENERATORS (ROTARY INVERTER)	8C	COMBINATION ALTERNATING- AND DIRECT-CURRENT
8A7-2	0-1 AMP	8C1	ACTUATORS AND MOTORS
8A7-3	1-250 VA	8C1-2	Bomb Door
8A7-4	251-500 VA	8C1-3	Camera Door
8A7-5	501-1000 VA	8C1-4	Cockpit Canopy
8A7-6	1001-3000 VA	8C1-5	Cowl Flap
8A8	HEATERS AND DEFROSTERS		
8A8-2	0-500 Watts		
8A8-3	501-1000 Watts		
8A8-4	1001-2000 Watts		
8A9	VIBRATORS		
8A9-2	Instrument Panel		
8A10	LIGHTING EQUIPMENT		
8A10-2	Landing		

8C1-6	Landing Gear	8C5-8	2001-3000 MA
8C1-7	Wing Flap, Dive Flap	8C5-9	3001-4000 MA
8C1-8	Trim Tab, Boost	8C6	GENERATORS
8C1-9	Radio Set	8C6-2	200 amp DC - 1200 VA AC
8C1-10	Carburetor Air	8C6-3	60 amp - 28 VA DC
8C1-11	Cockpit Heating and Ventilating	8C7	MOTOR GENERATORS
8C1-12	Anti-Ice and De-Ice	8C7-2	1-250 VA
8C1-13	Engine Control	8C7-3	251-500 VA
8C1-14	Valve	8C7-4	501-750 VA
8C1-15	Pump	8C7-5	751-1000 VA
8C1-16	Radome Retract	8C7-6	1001-1500 VA
8C1-17	Fan, Blower	8C7-7	1501-2500 VA
8C1-18	Windshield Wiper	8C7-8	2501-5000 VA
8C1-19	Compressor	8C8	BOX ASSEMBLIES
8C1-20	Tip Tank, Jato Release	8C9	INSTRUMENT PANEL VIBRATORS
8C1-21	Fractional Horsepower Motor	8C9-2	0-5 lbs
8C1-22	Integral Horsepower Motor	8C9-3	6-10 lbs
8C1-23	Propeller Pitch and Mixture	8C9-4	11-15 lbs
8C1-24	Fire Detection	8C9-5	16-20 lbs
8C1-25	Positioning Control System	8C9-6	21-25 lbs
8C1-26	Temperature Control	8C10	LIGHTING EQUIPMENT
8C1-27	Ground Cooling Door	8C10-2	Landing
8C1-28	Tachometer	8C10-3	Cockpit
8C1-29	Re-Entry Decoy	8C10-4	Inter-Aircraft
8C1-30	Cabin Pressure	8C10-5	Fluorescent
8C1-31	Thrust Recovery	8C10-6	Flasher
8C1-32	Winch	8C10-7	Flood
8C2	DO NOT NUMBER IN THIS SERIES	8C10-8	Panels
8C3	CONTROLLERS	8C11	POWER SUPPLIES
8C3-2	Trim Tab	8C11-2	110V AC Input - 300V DC Output
8C3-3	Afterburner Control	8C11-3	28V DC Input - 28V AC Output
8C3-4	Starter	8C11-4	115V AC Input - 275V DC Output
8C3-5	Generator	8C11-5	195/210V AC Input - 24/31V DC Output
8C3-6	Wing Flap	8C11-6	28V DC Input - 115V AC Output
8C3-7	Flasher	8C11-7	195/210V AC Input - 28V DC 100 Amps Output
8C3-8	Timers	8C11-8	Converter
8C3-9	Temperature	8C12	STARTERS
8C3-10	Air Inlet	8C12-2	Inertia and Direct Crank
8C3-11	Inverter	8C12-3	Direct Crank
8C3-12	Pylon	8C12-4	Energizer
8C3-13	Voltage	8C13	STARTER GENERATORS
8C3-14	Panel	8C13-2	1-100 amps
8C3-15	Warning Device	8C13-3	101-200 amps
8C3-16	Electrical	8C13-4	201-300 amps
8C3-17	Landing Gear	8C13-5	301-400 amps
8C3-18	Electronic	8C13-6	Direct Current
8C3-19	Digital Electronic	8C14	TRANSFORMER RECTIFIERS
8C4	CONNECTORS, PLUGS, TERMINALS	8C14-2	0-25 amps
8C5	DYNAMOTORS	8C14-3	26-50 amps
8C5-2	0-100 MA	8C14-4	51-100 amps
8C5-3	101-200 MA		
8C5-4	201-300 MA		
8C5-5	301-400 MA		
8C5-6	401-1000 MA		
8C5-7	1001-2000 MA		

8C14-5	0-120 amps	8D1-27	Paratrooper, Spoiler Door
8C14-6	101-200 amps	8D1-28	Rescue Door
8C15	WARNING DEVICES	8D1-29	Launcher Reel
8C15-2	Horn	8D1-30	Landing Light
8C15-3	Bell	8D1-31	Cargo Hook Unlatch
8C15-4	Lamp	8D1-32	Bleed Air Supply System
8C15-5	Warning Unit, Vacuum	8D1-33	Purge Gas Control
8C15-6	Fuel Pressure	8D1-34	Approach Chute Door
8C15-7	Oil Pressure	8D1-35	Flight Refueling System
8C15-8	Warning, Caution Panel	8D1-36	Hoist, Winch
8C15-9	Fire Detector	8D1-37	Rescue Hatch
8C15-10	Stall Warning	8D1-38	Nacelle Vent
8C15-11	Audible Signal	8D1-39	Selector Door
8C16	RESISTORS	8D1-40	Oil Cooler Door
8C16-2	Powerstats, Autotransformers	8D1-41	Camera Hoist
8C17	AMPLIFIERS	8D1-42	Clutch
8C17-2	Autopilot	8D1-43	Wrench
8C18	VOLTAGE REGULATORS	8D1-44	Wing Heating, Venting
8C19	BOXES	8D1-45	Guidance System
8C19-2	Distribution	8D1-46	Step
8C19-3	Junction	8D1-47	Pitch Control
8C20	HEATING SYSTEM	8D1-48	Hose Reel Door
8C20-2	Electrical	8D1-49	Wing Tip Door
8C21	PANELS	8D1-50	Ejection Door
8C22	FILTER ASSEMBLIES	8D1-51	Gun Post Door
8D	DIRECT CURRENT	8D1-52	Flight Refueling Pod Door
8D1	ACTUATORS AND MOTORS	8D1-53	Locks (See 8D1-92)
8D1-2	Cargo, Ramp Door	8D1-54	Tail Skid
8D1-3	Camera Door	8D1-55	Alternator Cooling Door
8D1-4	Cockpit Canopy	8D1-56	Landing Gear Door
8D1-5	Cowl Flap, Air Plug	8D1-57	Bomb Sight
8D1-6	Landing Gear	8D1-58	Amplifier
8D1-7	Wing Flap, Dive Flap	8D1-59	Power Unit
8D1-8	Trim Tab, Boost	8D1-60	Beacon, Anti-Collision
8D1-9	Oil Cooler, Intercooler	8D1-61	Fuel Control
8D1-10	Carburetor Air	8D1-62	Switch
8D1-11	Cockpit Heat, Vent	8D1-63	Transmission
8D1-12	Anti-Ice and De-Ice	8D1-64	Flight Control
8D1-13	Engine Control	8D1-65	Intervalometer
8D1-14	Valve	8D1-66	Rudder Control
8D1-15	Pump	8D1-67	Arming System
8D1-16	Radome Retract	8D1-68	Trajectory Control
8D1-17	Fan, Blower	8D1-69	Fire Control
8D1-18	Windshield Wiper	8D1-70	Paratainer Door
8D1-19	Compressor	8D1-71	Missile Surface Control
8D1-20	Tip Tank, Jato Release	8D1-72	Antenna
8D1-21	Fractional Horsepower	8D1-73	Turret Drive
8D1-22	Integral Horsepower	8D1-74	Governor
8D1-23	Propeller Pitch and Mixture	8D1-75	Static Line Retriever
8D1-24	Hose Reel	8D1-76	Gear Case
8D1-25	Air Inlet Door, Scoop, Screen	8D1-77	Calibrator
8D1-26	Seat Control	8D1-78	Particle Sampler
		8D1-79	Training Equipment
		8D1-80	Trailer
		8D1-81	Camera
		8D1-82	Radio, Radar Equipment
		8D1-83	Transducer
		8D1-84	Heat Exchanger

8D1-85	Brake	8D4	CONNECTORS, PLUGS, TERMINALS, ETC.
8D1-86	Rotor Blade Tracking	8D4-2	Conduit Assemblies
8D1-87	Generator	8D4-3	Rheostats
8D1-88	Thermostat	8D4-4	Plugs
8D1-89	Launch Gear	8D4-5	Receptacles
8D1-90	Shifter	8D5	DYNAMOTORS
8D1-91	Pylon	8D5-2	0-100 MA
8D1-92	Missile Release and Lock	8D5-3	101-200 MA
8D1-93	Cooling	8D5-4	201-300 MA
8D1-94	Launcher, Airborne Guided-Missile	8D6	GENERATORS, ENGINE-DRIVEN
8D1-95	Chaff Dispenser	8D6-2	1-50 amps
8D1-96	Starter	8D6-3	51-100 amps
8D1-97	Indicator	8D6-4	101-200 amps
8D1-98	Bomb Rack	8D6-5	201-300 amps
8D1-99	Transmitter	8D6-6	301-400 amps
8D1-100	Stick Shaker	8D6-7	20 KW
8D1-101	Thrust Reverse	8D6-8	Tachometer Generators
8D1-102	Lateral Control	8D7	MOTOR GENERATORS
8D1-103	Arresting Hook	8D7-2	Voltage Boosters
8D2	BATTERIES AND CHARGERS	8D8	HEATERS AND DEFROSTERS
8D3	CONTROLLERS	8D8-2	Ignition Heater
8D3-2	Trim Tab	8D8-3	501-1000 watts
8D3-3	Electronic	8D8-4	1001-2000 watts
8D3-4	Afterburner	8D8-5	2001-3000 watts
8D3-5	Starter	8D8-6	Purging Heater
8D3-6	Generator	8D9	INSTRUMENT PANEL VIBRATORS
8D3-7	Interior Lighting	8D9-2	0-5 pounds
8D3-8	Flasher	8D9-3	6-10 pounds
8D3-9	Timer	8D9-4	11-15 pounds
8D3-10	Temperature	8D9-5	16-20 pounds
8D3-11	Landing Gear	8D9-6	21-25 pounds
8D3-12	Warning System	8D10	LIGHTING EQUIPMENT
8D3-13	Brake System	8D10-2	Landing
8D3-14	Steering	8D10-3	Cockpit
8D3-15	Pressure Sensor	8D10-4	Inter-Aircraft
8D3-16	Rudder	8D10-5	Fluorescent
8D3-17	Shaker	8D10-6	Navigation
8D3-18	Panel Assembly	8D10-7	Panel
8D3-19	Control Box	8D10-8	Indicator
8D3-20	Motor Control	8D10-9	Vibrator Pack
8D3-21	Switch	8D10-10	Clearance
8D3-22	Inverter, Synchronizer	8D10-11	Anti-Collision
8D3-23	Deceleration Parachute	8D10-12	Fire Control
8D3-24	Hoist	8D10-13	Map Reading
8D3-25	Counter	8D10-14	Airborne Search
8D3-26	Dimming Control	8D11	POWER SUPPLIES
8D3-27	Sight	8D11-2	Static Converter
8D3-28	Empennage (Stabilizing Tail Assembly)	8D11-3	Power Unit
8D3-29	Camera Control	8D12	STARTERS
8D3-30	Overhead Delivery	8D12-2	Combination Inertia-Direct Crank
8D3-31	Detecting System	8D12-3	Direct Crank
8D3-32	Wing Flap	8D13	STARTER GENERATORS
8D3-33	Pitch, Roll	8D13-2	1-100 amps
8D3-34	Systems		

8D13-3	101-200 amps	8E1-12	Thermocouple
8D13-4	201-300 amps	8E2	RECIPROCATING ENGINES
8D13-5	301-400 amps	8E2-2	System
8D13-6	401-500 amps	8E2-3	Coil
8D13-7	1000 amps	8E2-4	Ignition Harness
8D14	TRANSFORMER RECTIFIERS	8E2-5	Magneto
8D14-2	0-25 amps	8E2-5-2	4-, 5-, and 6- Cylinder
8D14-3	26-50 amps	8E2-5-3	7- and 9- Cylinder
8D14-4	51-100 amps	8E2-5-4	12- Cylinder
8D14-5	101-150 amps	8E2-5-5	14- Cylinder
8D15	WARNING DEVICES	8E2-5-6	18- Cylinder
8D15-2	Horn	8E2-5-7	2- Cylinder
8D15-3	Bell	8E2-6	Spark Plug
8D15-4	Carbon Monoxide Signal	8E2-7	Switch
8D15-5	Automatic	8E2-8	Vibrator
8D15-6	Signal Amplifier	8E2-9	Tachometer
8D15-7	Stall Warning - Safe Flight	8E3	AUXILIARY POWER UNITS
8D15-8	Flasher	8E3-2	Exciter
8D15-9	Panel	8E3-3	Panel Assemblies
8D15-10	Audible Signal	8R	RELAYS - INCLUDING SOLENOIDS AND CONTACTORS
8D15-11	Trip Signal	8R1	GENERATOR RELAYS
8D15-12	Detector	8R1-2	Alternating-Current
8D15-13	Visual Signal	8R1-3	Direct-Current
8D16	VOLTAGE REGULATORS	8R2	MOTOR GENERATORS (INVERTER)
8D17	SOLENOIDS	8R3	MULTIPLE APPLICATION
8D18	FANS AND BLOWERS	8R4	STARTER RELAYS
8D18-2	Flying Suits	8R5	CABIN PRESSURE CONTROL SYSTEMS
8D19	AMPLIFIERS	8R6	FIRE CONTROL SYSTEMS
8D19-2	Fuel Signal	8R7	RADAR RELAYS
8D20	DISCONNECTS (ELECTRICAL)	8R7-2	Switch
8D21	SENSORS	8R8	ROTARY AND SELECTOR RELAYS
8D22	HARNESS ASSEMBLIES	8R8-2	Ignition System Rotary
8D23	CABLE ASSEMBLIES	8R8-3	Switch Selector
8D24	PANELS	8R8-4	Function Selector
8D25	JUNCTION BOX ASSEMBLIES	8R9	TRANSFER RELAYS
8D26	UNITS AND ASSEMBLIES	8R9-2	Fuel Quantity
8D27	ELECTRICAL MODULES	8R10	METER RELAYS
8E	IGNITION SYSTEMS AND COMPONENTS	8R11	CAPACITORS
8E1	TURBOJET AND TURBOPROP	8RA	ASSOCIATED EQUIPMENT
8E1-2	Ignition System	8RA1	PANEL
8E1-3	Spark Plug Igniter	8S	SWITCHES
8E1-4	Ignition Timer	8S1	FLOAT
8E1-5	Coil	8S1-2	Fuel Float
8E1-6	Cable	8S1-3	Oil Level
8E1-7	Lead, Cable Assembly	8S2	PRESSURE
8E1-8	Exciter	8S2-2	Fuel
8E1-9	Harness		
8E1-10	Stator		
8E1-11	Generator Assembly		

8S2-3	Hydraulic, Pneumatic, Vacuum	8S6	THERMOSTAT
8S2-4	Miniature	8S6-2	Anticipator
8S2-5	Oil	8S6-3	Detector
8S2-6	Signal	8S6-4	Temperature Control
8S2-7	Wave Guide	8S6-5	Landing Gear Control
8S2-8	Manifold	8S6-6	Altitude Control
8S2-9	Airspeed	8S6-7	Flight Control
8S2-10	Thrust		
8S2-11	Barometric	8S7	LIMIT
8S2-12	Brake		
8S2-13	Depressurized	8S8	LEVER
8S3	ROTARY AND SELECTOR	8S9	RADAR
8S3-2	Auxiliary	8S9-2	Electromagnetic
8S3-3	Wing Flap System	8S9-3	Pressure
		8S9-4	Coaxial
8S4	CIRCUIT BREAKER	8S10	TIMER
8S4-2	Three Phase, Four Wire Circuit	8S11	INERTIA (ACCELERATION)
8S5	PUSH BUTTON	8S12	DECELERATION
8S5-2	Micro	8S13	PUSH/PULL
8S5-3	Manual		

CHAPTER 12

CATEGORY 9 - AIRCRAFT AND MISSILE HYDRAULIC, PNEUMATIC AND VACUUM SYSTEMS

12-1 GENERAL.

12-1.1 Category 9 contains airborne hydraulic, pneumatic, and vacuum systems. These systems are divided into equipment series and further divided into equipment subseries within each equipment series. TO numbers in Category 9 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 12-2.

12-1.2 TO data pertaining to more than one system is numbered in the category general series.

12-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

12-2 NUMBERING PATTERNS.

12-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series within a system.

12-2.1.1 Part one is always the numeric 9 that identifies Category 9.

12-2.1.2 Part two is an alpha character indicating the system, i.e., H - hydraulic systems; P - pneumatic systems; and V - vacuum systems.

12-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. These TO numbering series are outlined in paragraph 12-4.

12-2.2 **GROUP TWO.** Since TO numbering patterns in Category 9 use both three and four basic groups, the identifiers in group two are not constant. The following explains both numbering patterns:

12-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

12-2.2.2 If the TO number contains four basic groups, the equipment series identified in group one, part three, has been divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

12-2.3 **GROUP THREE.**

12-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 9:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

12-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 9:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

12-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment or components. When this occurs the specific types of TOs are then identified in group four.

12-2.4 **GROUP FOUR.** If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 12-2.3.1, above.

12-3 EXAMPLES OF CATEGORY 9 NUMBERING PATTERNS.

12-3.1 Overhaul instructions for a hydraulic filter for the C-135A aircraft, type G187M-68:

9H3-3-55-3	
9	Category 9
H	Hydraulic System
3	Filter and Restrictor Series
3	Line Type Filter Subseries
55	Represents Type G187M-68
3	Number Reserved for Overhaul Instructions

12-3.2 An illustrated parts breakdown for a pressure pump, type MA-2, for C-141A aircraft:

9P4-2-16-24

9 Category 9
 P Pneumatic Systems
 4 Pump and Compressor Series
 2 Pump Subseries
 16 Represents Type MA-2
 24 Number Reserved for Illustrated
 Parts Breakdown

12-3.3 Illustrated parts breakdown for a vacuum shut-off valve, PN 2V-750 to be used on multiple aircraft:

9V1-3-7-4

9 Category 9
 V Vacuum Systems
 1 Valve Series
 3 Shutoff Valve Subseries
 7 Represents PN 2V-750
 4 Number Reserved for Illustrated
 Parts Breakdown

12-4 CATEGORY 9 NUMBERING SERIES.

9 AIRCRAFT AND MISSILE
 HYDRAULIC, PNEUMATIC, AND
 VACUUM SYSTEMS

9H HYDRAULIC SYSTEMS AND
 EQUIPMENT

9H1 ACCUMULATORS

9H1-2 Cylindrical

9H1-3 Spherical

9H1-4 Sustainer

9H1-5 Booster

9H2 CYLINDERS AND ACTUATORS

9H2-2 Main Landing Gear

9H2-3 Nose Landing Gear

9H2-4 Flight Surface Control

9H2-5 Auxiliary Control

9H2-6 Air Refueling

9H2-7 Engine Control

9H2-8 Missile Guidance

9H3 FILTERS AND RESTRICTORS

9H3-2 Reservoir

9H3-3 Line

9H3-4 Vent

9H3-5 Magnetic

9H4 PUMPS

9H4-2 Engine Driven

9H4-3 Electric Motor Driven

9H4-4 Hand Driven

9H4-5 Air Driven

9H4-6 Engine Oil Driven

9H5

9H5-2

9H5-3

RESERVOIRS

Non-Pressurized

Pressurized

9H6

9H6-2

9H6-3

9H6-4

9H6-5

TRANSMISSIONS

Reciprocating Engine Driven

Jet Engine Driven

Turbine Driven

Transmission Drive

9H7

9H7-2

9H7-3

POWER PACKS

Electric Driven

Turbine Driven

9H8

9H8-2

9H8-3

9H8-4

9H8-5

9H8-6

9H8-7

9H8-8

9H8-9

9H8-10

9H8-11

9H8-12

9H8-13

9H8-14

9H8-15

9H8-16

9H8-17

9H8-18

9H8-19

9H8-20

9H8-21

9H8-22

9H8-23

9H8-24

9H8-25

9H8-26

9H8-27

9H8-28

9H8-29

9H8-30

9H8-31

9H8-32

9H8-33

9H8-34

9H8-35

9H8-36

9H8-37

VALVES

Relief

Regulator

Shutoff

Shuttle

Check

Flow Equalizer

Restrictor

Sequence

Self-Sealing Coupling

By-Pass

Pressure Switch

Drain

Selector

Pressure Reducing

Flow Regulator

Isodraulic

Swivel

Pressure Damper

Up-Latch

Auto-Lock Wing Flap

Snubber

Limit

Constant Flow

Gland

Priority

Manifold Distribution

Metering

Slide

Control

Purge

Override

Transfer

Dump

Pilot

Fill

Diverter

9H9

9H9-2

9H9-3

WINDSHIELD WIPERS

Single

Dual

9H10

9H10-2

9H10-3

MOTORS

1000 PSI

3000 PSI

9H10-4	2000 PSI	9P5-3	Regulator
9H10-5	1600 PSI	9P5-4	Quick Disconnect
9H10-6	4000 PSI	9P5-5	Shutoff
9H11	COUPLINGS	9P5-6	Filler
9H12	MODULATOR ASSEMBLIES	9P5-7	Priority
9H13	DAMPERS	9P5-8	Pressure Reducing and Fuse
9H14	COOLERS AND RADIATORS	9P5-9	Selector
9H15	STOP ASSEMBLIES	9P5-10	Shuttle
9H16	RESTRICTORS (Use 9H3)	9P5-11	Warning Switch
9H17	REGULATORS	9P5-12	Check
9H17-2	Pressure	9P5-13	Restrictor
9H17-3	Control	9P5-14	Control
9H17-4	Power Steering	9P5-15	By-Pass
9H18	MANIFOLD ASSEMBLIES	9P5-16	Metering
9H19	COMPENSATOR ASSEMBLIES	9P5-17	Bleed
9H20	SEPARATORS	9P5-18	Starter
9H21	STARTERS	9P5-19	Gun Gas Purging
9H22	REELING MACHINES	9P5-20	Pressure Operated
9H23	GENERATORS	9P5-21	Dump
9H24	TRANSFORMERS	9P5-22	Sequence
9H25	EXTENSIONS	9P5-23	Butterfly
9H26	INTERCONNECTING ASSEMBLIES	9P5-24	Flow Divider
9H27	CHANNEL ASSEMBLIES	9P6	FILTERS
9H28	DRIVES AND MECHANISMS, DIFFERENTIAL ASSEMBLIES	9P6-2	Liquid
9H29	DISCONNECTS	9P6-3	Nitrogen Gas
9P	PNEUMATIC SYSTEMS	9P7	DRIVES
9P1	ACCUMULATORS AND BOTTLES	9P8	COUPLINGS
9P1-2	Bottle	9P9	HEAT EXCHANGERS
9P1-3	Accumulator	9P10	REGULATORS
9P2	CYLINDERS AND ACTUATORS	9P10-2	Elevator Control Feel
9P2-2	Landing Gear	9P10-3	Pneudraulic
9P2-3	Auxiliary	9P10-4	Pressure
9P2-4	Escape Hatch	9P11	CONTROLS
9P3	DEHYDRATORS AND CHEMICAL DRYERS	9P12	MOTORS
9P3-2	Dehydrator	9P13	RELAYS
9P3-3	Chemical Dryer	9P14	RESERVOIRS
9P3-4	Mechanical Moisture Separator	9P15	VENTILATION UNITS
9P4	PUMPS AND COMPRESSORS	9V	VACUUM SYSTEMS
9P4-2	Pump	9V1	VALVES
9P4-3	Compressor	9V1-2	Relief
9P5	VALVES	9V1-3	Shutoff
9P5-2	Relief	9V1-4	Selector
		9V1-5	Regulator
		9V2	PUMPS
		9V2-2	Engine Driven
		9V2-3	Electric Motor Driven
		9V3	DECOYS
		9V4	FILTERS
		9V4-2	Vent

CHAPTER 13

CATEGORY 10 - PHOTOGRAPHIC EQUIPMENT

13-1 GENERAL.

13-1.1 Category 10 contains twelve primary photographic systems. These systems are divided into equipment series and in some instances further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 10 use both three and four groups for data identification. Numbering patterns for both groups are discussed in paragraph 13-2.

13-1.2 TO data pertaining to more than one system is numbered in the category general series.

13-1.3 Information pertaining to more than one equipment series within a system is numbered in the system general series.

13-2 NUMBERING PATTERNS.

13-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within each system.

13-2.1.1 Part one is always the numeric 10 identifying Category 10.

13-2.1.2 Part two is an alpha character that indicates the photographic equipment system, i.e., A - airborne cameras; B - ground cameras; C - motion picture cameras; D - projection equipment; E - processing equipment; F - microfilm equipment; G - photographic kits; H - interpretation and photogrammetric equipment; J - sensitized materials; K - radar assessing equipment; L - photographic instrumentation equipment; and M - mobile photographic laboratories.

13-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. These TO numbering series are outlined in paragraph 13-4.

13-2.2 GROUP TWO. Since TO numbering patterns in Category 10 use both three and four basic groups, the identifiers in group two are not constant. The following explains both numbering patterns:

13-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

13-2.2.2 If the TO number contains four basic groups, the equipment series identified in group

one, part three, has been divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN identified in group three.

13-2.3 GROUP THREE.

13-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 10:

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Corrosion Control

13-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 10:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

13-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific equipment or components. When this occurs the specific types of TOs are then identified in group four.

13-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 13-2.3.1.

13-3 EXAMPLES OF CATEGORY 10 NUMBERING PATTERNS.

13-3.1 A service manual for a still picture camera, type KB-18A, for use on RF-4C aircraft:

10A1-6-6-2

10	Category 10
A	Airborne Cameras
1	Aircraft Camera Series
6	Strike Camera Subseries
6	Represents Type KB-18A
2	Number Reserved for Service Manuals

13-3.2 Operating and service instructions for a Mark II contact printer:

10E8-2-19-1

10	Category 10
E	Processing Equipment
8	Printer Series
2	Contact Printer Subseries
19	Represents Type Mark II
1	Number Reserved for Operating Instructions

13-3.3 Operating and maintenance instructions with illustrated parts breakdown for a mobile photo laboratory, type ES-64A:

10M1-7-3-1

10	Category 10
M	Photographic Laboratories
1	Mobile Laboratory Series
7	Photo Interpretation Subseries
3	Represents Type ES-64A
1	Number Reserved for Operating Instructions

13-4 CATEGORY 10 NUMBERING SERIES.

10 PHOTOGRAPHIC EQUIPMENT

10A AIRBORNE CAMERAS AND EQUIPMENT

10A1 AIRCRAFT CAMERAS

10A1-2 Gun

10A1-3 Mapping

10A1-4 Radar Recording

10A1-5 Reconnaissance

10A1-6 Strike

10A1-7 Continuous Strip

10A1-8 Pair

10A1-9 Motion Picture

10A1-10 Optical

10A2 BODIES, LENS, CONES, REELS, ETC.

10A2-2 Bodies

10A2-3 Lens, Cone

10A2-4 Film Magazine

10A2-5 Reel

10A2-6 Magnetic Clutch and Brake Assembly

10A3 MOUNTS AND GYROSCOPES

10A4 VIEWFINDERS

10A5 CONTROLS

10A5-2 Film Magazine

10A5-3 Gun Camera

10A5-4 Mapping Camera

10A5-5 Radar Recording Camera

10A5-6 Reconnaissance Camera

10A5-7 Strike Camera

10A5-8 Strip Camera

10A6 CAMERA CONTROL SYSTEMS, UNIVERSAL

10A6-2 Amplifier Unit

10A6-3 Amplifier

10A6-4 Base Mounting

10A6-5 Chassis

10A6-6 Computer Unit

10A6-7 Computer

10A6-8 Control

10A6-9 Detector

10A6-10 Discriminator

10A6-11 Generator

10A6-12 Indicator

10A6-13 Intervalometer

10A6-14 Junction Box

10A6-15 Memory Delay Unit

10A6-16 Power Supply

10A6-17 Synchronizer Marker Unit

10A6-18 Pulse Shaper

10A6-19 Converter

10A6-20 Adapter

10A7 NIGHT PHOTO EQUIPMENT

10A7-2 Lamp Assembly

10A7-3 Photoflash Cartridge Ejector

10A7-4 Detector

10A8 PHOTO NAVIGATION EQUIPMENT

10A8-2 Pilot Director

10A8-3 Control System

10A8-3-2 Servo Amplifier

10A8-3-3 Heading Error Compensator

10A8-3-4 Indicator

10A8-3-5 Drift Angle Control Box

10A8-3-6 Tripping Pulse Duration

10A8-4 Converter

10A9 RECONNAISSANCE DEVICES

10A10 DATA DISPLAY SETS

10A11 TEST EQUIPMENT (Use 33D10)

10A12 LIGHT BOXES

10A13 PHOTOMETERS

10A14	ENCODERS	10C12	COATERS
10A15	COOLING UNITS	10C13	HAND HELD CAMERAS
10A16	CALIBRATORS	10C14	VIDEO SYSTEMS
10A17	CAMERA PODS	10D	PROJECTION EQUIPMENT
10B	GROUND CAMERAS AND EQUIPMENT	10D1	PROJECTORS
10B1	GROUND CAMERAS	10D1-2	Motion Picture
10B1-2	16MM (Still)	10D1-3	Still Picture
10B1-3	35MM (Still)	10D1-4	Continuous Stereoscopic
10B1-4	50MM (Still)	10D2	POINTERS (Optical)
10B1-5	3 1/4 X 4 1/4	10D3	SCREENS
10B1-6	4 X 5	10D4	VIEWERS
10B1-7	8 X 10	10D4-2	Still Picture
10B1-8	Copying	10D4-3	Motion Picture
10B1-9	Identification	10D4-4	Stereoscopic
10B1-10	Data Recording	10D5	COMPARATORS
10B1-11	Oscilloscope	10D5-2	Photographic
10B1-12	Hand	10E	PROCESSING EQUIPMENT
10B1-13	Tracking	10E1	DEHUMIDIFIERS
10B2	EXPOSURE METERS	10E2	DEVELOPERS AND PROCESSORS
10B3	FLASH UNITS	10E3	DRYERS
10B4	LIGHT ASSEMBLIES	10E3-2	Film
10B5	TRIPODS	10E3-3	Print
10B6	STANDS	10E4	HEATERS AND CHILLERS (WATER)
10B7	VIEWERS	10E5	PROCESSING, EXPOSURE, TEST, AND STAMPING MACHINES
10B8	ELECTRONIC OPTICAL TRACKING SYSTEM	10E5-2	Continuous Processing
10C	MOTION PICTURE CAMERAS AND EQUIPMENT	10E5-3	Exposure Test
10C1	CAMERAS	10E5-4	Stamping
10C1-2	8 MM	10E6	DRY MOUNTING PRESSES
10C1-3	16 MM	10E7	PHOTOCOPY EQUIPMENT
10C1-4	35 MM	10E8	PRINTERS
10C1-5	Missile	10E8-2	Contact (Manual)
10C1-6	70 MM	10E8-3	Continuous
10C2	CLEANERS	10E8-4	Projection
10C3	EDITORS AND VIEWERS	10E9	SINKS
10C4	MACHINE MEASURING EQUIPMENT	10E10	STRAIGHTENERS
10C5	REWIND EQUIPMENT	10E11	MIXERS
10C6	SOUND RECORDING EQUIPMENT	10E12	TIMERS
10C7	SPLICERS	10E12-2	Electrical
10C8	TRIPODS AND HEADS	10E13	WASHERS
10C9	FILM TITLERS	10E14	WRINGERS
10C10	SCORING ASSEMBLIES	10E15	MIXER-DISTRIBUTORS
10C11	BODIES AND MAGAZINES	10E16	CHOPPERS
		10E17	EASELS

10E18	LIGHT ASSEMBLIES	10G13	WATER SUPPLY
10E19	CONTROLS	10G14	VECTOGRAPH
10E20	MECHANISMS	10G15	OPTIC
10E21	CODERS	10G16	CARRYING AND STORAGE CASES
10E22	SIMULATORS	10G17	ADAPTER KITS
10E23	REPRODUCERS	10H	INTERPRETATION AND PHOTOGRAMMETRY EQUIPMENT
10E24	ANALYZERS	10H1	HEIGHT FINDERS
10E25	TRANSLATORS	10H2	PHOTO INTERPRETERS
10E26	EJECTOR SETS	10H3	PLOTTERS
10E27	METERS	10H4	FILM PLOTTING TABLES
10E27-2	Sensitometer	10H5	SKETCHMASTERS
10E27-3	Densitometer	10H6	TEMPLET SETS, SLOTTED
10E28	RECTIFIERS	10H7	RECTIFIERS
10E29	FOCATRONS	10H8	PROJECTORS
10E30	LIGHT TABLES	10H9	INTERPRETATION EQUIPMENT
10E31	SILVER RECOVERY UNITS	10H10	REEL BRACKETS
10E32	FILM FINISHING	10H11	ANALYTICAL SYSTEMS
10E33	PRESSURE REDUCING VALVES	10J	SENSITIZED MATERIALS AND SUPPLIES
10E34	DUPLICATORS	10K	RADAR ASSESSING EQUIPMENT
10E35	VALVES	10K1	GENERAL
10F	MICROFILM EQUIPMENT	10K2	PLOTTING BOARDS
10F1	CAMERAS	10L	PHOTO INSTRUMENTATION EQUIPMENT
10F2	ENLARGERS MARKING	10L1	CAMERAS
10F3	READERS	10L2	MAGAZINES
10F4	CUTTERS	10M	PHOTO LABORATORIES
10G	KITS, PHOTOGRAPHIC- EQUIPMENT	10M1	MOBILE
10G1	DARKROOM	10M1-2	Processing (Shelter)
10G2	DEHUMIDIFYING	10M1-3	Printing
10G3	DEVELOPING	10M1-4	Reproduction
10G4	DRYING	10M1-5	Maintenance Shop
10G5	LABORATORY	10M1-6	Edit, Inspection
10G6	LIGHTING	10M1-7	Interpretation
10G7	MIXER	10M1-8	Storage Facility
10G8	NEGATIVE MARKING	10M1-9	Chemical Mixing, Distribution
10G9	COPYING AND ENLARGING	10M1-10	Film Titling, Cleaning
10G10	PRINTING	10M1-11	Film Handling Facility
10G11	SINK	10M1-12	Administration
10G12	TEMPERATURE CONTROL	10M1-13	Accessing-Briefing
		10M1-14	Water Conditioner
		10M1-15	Electronic Optical Tracking

CHAPTER 14

CATEGORY 11 - ARMAMENT EQUIPMENT

14-1 GENERAL.

14-1.1 Category 11 contains thirteen armament systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 11 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 14-2.

NOTE

Nuclear Weapons TO Numbers (sub-category 11N) are not described here. SA-ALC/NWDT is the only organization authorized to assign 11N series TO numbers (paragraph 1-4.6.1).

14-1.2 TO data pertaining to more than one system is numbered in the category general series.

14-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

14-2 NUMBERING PATTERNS.

14-2.1 GROUP ONE. This group has three parts that identify the category, system and equipment series within the system.

14-2.1.1 Part one is always the numeric 11 identifying Category 11.

14-2.1.2 Part two is an alpha character identifying the armament system, i.e., A - ammunition; B - bombing systems and equipment; C - chemical warfare agents, explosives, gases and weapons; D - decontamination, impregnating and protective equipment; E - biological warfare agents; F - fire control systems and equipment; G - guidance and control systems and equipment; H - hazard detecting equipment; K - guided glide weapons; L - launchers and equipment; P - egress systems, explosive devices and equipment; R - missile re-entry vehicles and equipment; and W - weapons and equipment. Only two of the 13 systems in Category 11 have associated equipment identified. These two systems are: launchers and equipment, and weapons and equipment. The associated equipment is identified by adding the alpha A immediately following the armament system identifier, i.e., LA and WA.

14-2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series are outlined in paragraph 14-4.

14-2.2 GROUP TWO. TO numbering patterns in Category 11 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

14-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

14-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

14-2.2.3 Bombing systems and fire control systems with JETDS (Joint Electronics Type Designator System) numbers or Air Force type numbers are numbered in the 11B1 and 11F1 series respectively. The type designator, in this instance, is used to form group two of the TO number. (See examples in paragraphs 4-3.4 and 4-3.5.)

14-2.3 GROUP THREE.

14-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 11:

-01	List of Applicable Publications (LOAP)
-06	Work Unit Code Manuals
-07	thru -09 Reserved
-1	Operating Instructions
-2	Service or Maintenance Manuals
-3	Depot Maintenance or Overhaul Instructions
-4	Illustrated Parts Breakdown
-6	Inspection Requirements
-7	Storage, Installation and Installation Test Procedures
-8	Test Procedures, Checkout Manuals, or Programmed Tests

14-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 11:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

14-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific component assemblies.

14-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 14-2.3.1.

14-3 EXAMPLES OF CATEGORY 11 NUMBERING PATTERNS.

14-3.1 Storage procedures for cluster munitions, type CBU-30/A:

11A9-14-7
 11 Category 11
 A Ammunition
 9 Cluster Munition Series
 14 Identifies Type CBU-30/A
 7 Number Reserved for Storage Instructions

14-3.2 Operating and maintenance instructions for a smoke tank, PN 2105220:

11C15-2-7-1
 11 Category 11
 C Chemical Warfare Agents, Explosives, Gases and Weapons
 15 Tank Series
 2 Smoke Tank Subseries
 7 Identifies PN 2105220
 1 Number Reserved for Operating Instructions

14-3.3 Overhaul instructions for a target position computer, PN 737511:

11F12-13-2-3
 11 Category 11
 F Fire Control Systems
 12 Computer Series
 13 Target Position Type Subseries
 2 Identifies PN 737511
 3 Number Reserved for Overhaul Instructions

14-3.4 Field maintenance instructions for bombing navigation system, optical and radar, type AN/ASB-15A,B:

11B1-ASB15-2-3
 11 Category 11
 B Bombing Systems and Equipment
 1 Bombing System Series
 ASB15 Identifies Type AN/ASB-15
 2 Number Reserved for Maintenance Instructions
 3 Identifies the Third Section

14-3.5 Field maintenance instructions for fire control system, type MA-8, PN 521E747G8, G9 used on F-105 aircraft.

11F1-MA8-12
 11 Category 11
 F Fire Control Systems and Equipment
 1 Fire Control System Series
 MA8 Identifies Type MA-8
 12 Number Reserved for Maintenance Instructions

14-4 CATEGORY 11 NUMBERING SERIES.

11 ARMAMENT EQUIPMENT
 11A MUNITIONS
 11A1 BOMBS, EXPLOSIVE
 11A2 BOMBS, INCENDIARY
 11A3 BOMBS, PRACTICE AND LEAFLET
 11A4 BOOSTERS AND BURSTERS
 11A5 AERIAL MINES, NON-CLUSTERED
 11A6 FINS, BOMB
 11A7 FUSES, BOMB
 11A8 MISCELLANEOUS GROUND MUNITIONS
 11A9 CLUSTER MUNITIONS
 11A10 FLARES, MARKERS, SIGNALS, AND SIMULATORS
 11A11 ROCKETS AND ROCKET COMPONENTS
 11A12 ADAPTERS, CLUSTER-BOMB
 11A13 GUN AMMUNITION
 11A14 RIOT CONTROL AND SMOKE MUNITIONS

11A15	MISSILE EXPLOSIVE COMPONENTS	11B6	BRACES
11A16	COUNTERMEASURES	11B6-2	Sway
11A17	CARGO, PARACHUTE, AND WEAPONS RETARDATION SYSTEMS	11B7	COMPARATORS
11A18	AIRCRAFT STORES JETTISONING, AIRCRAFT STARTING, AND RELATED EXPLOSIVE DEVICES	11B7-2	Type CM
11A19	RIOT CONTROL AIDS	11B7-3	Type GS
11A20	DEMOLITION MATERIAL AND DESTRUCTIVE DEVICES	11B7-4	Type MA-2
11A21	DISPENSERS, FLARE	11B7-5	Type AN
11A22	EXPLOSIVE DEVICES, TARGET DRONE, AND SPECIAL PURPOSE AIRCRAFT	11B7-6	Groundspeed and Track
11A23	IGNITERS	11B8	COMPENSATORS
11A24	CARTRIDGES	11B8-2	Transmission Error
11B	BOMBING SYSTEMS AND EQUIPMENT	11B8-3	Compass
11B1	BOMBING SYSTEMS	11B9	COMPRESSORS
11B1-A	Type A	11B9-2	Air
11B1-K	Type K	11B10	COMPUTERS
11B1-M	Type M	11B10-2	Type A Bombing, Navigation
11B2	AMPLIFIERS	11B10-3	Azimuth
11B2-2	AN Type	11B10-4	Ballistic
11B2-3	V Type	11B10-5	Bomb Release
11B2-4	Computer	11B10-6	BT Type (Toss Bomb) (Use 11B10-9)
11B2-5	Sealed	11B10-7	Electronic
11B2-6	Servo	11B10-8	Type K Position
11B2-7	Stabilization	11B10-9	Toss Bomb
11B2-8	Audio Frequency	11B10-10	Altitude
11B2-9	Electronic Control	11B10-11	Missile Release Navigational
11B2-10	Video	11B10-12	Range
11B2-11	Radar Indicator Sweep	11B10-13	Tracking
11B2-12	Intermediate Frequency	11B10-14	Air Navigation
11B2-13	Current Deflection	11B10-15	Type MA-2
11B2-14	Power Supply	11B10-16	Velocity
11B2-15	Displacement	11B10-17	Dive Angle
11B3	ANTENNAS	11B10-18	Simulator
11B3-2	Radar	11B10-19	Roll Error
11B3-3	Radio	11B10-20	Panels and Racks
11B4	BANKS	11B10-21	Terrain Clearance
11B4-2	Relay	11B10-22	Time
11B5	BOXES	11B10-23	Flight Directional
11B5-2	Control	11B10-24	Programmers
11B5-3	Junction	11B10-25	Data Subsystems
11B5-4	Potentiometer	11B11	CONTAINERS
11B5-5	Relay	11B11-2	Aero
11B5-6	Fuse	11B12	CONTROLS
		11B12-2	Arming
		11B12-3	Ballistics
		11B12-4	Bomb Release Interval
		11B12-5	Line of Sight
		11B12-6	Navigation
		11B12-7	Primary
		11B12-8	Tracking
		11B12-9	Guidance
		11B12-10	Computer
		11B12-11	Tuning
		11B12-12	Range
		11B12-13	Indicator
		11B12-14	Optics

11B12-15	Radar Set Gain	11B21-2	Cathode Ray
11B12-16	Test	11B21-3	Group
11B12-17	Remote Module	11B21-4	Meter
11B12-18	Intervalometer	11B21-5	Multiple
11B12-19	Emergency Bombing	11B21-6	Position
11B12-20	Type MA-2 and ASB-4	11B21-7	Dive and Roll
11B12-21	Doppler Radar	11B21-8	Sight Angle
11B12-22	Time	11B21-9	Checkout
11B12-23	Heading Reference	11B21-10	Topographical Comparator
11B12-24	Bomb Mark	11B21-11	Pilot Ground Track
11B12-25	Terrain Radar	11B21-12	Clearance
11B12-26	Selector	11B21-13	Radar Flight
11B12-27	Calibration		
11B12-28	Frequency	11B22	INTERCONNECTING GROUP
11B12-29	Radar Set	11B23	SETS
11B12-30	Power Supply	11B23-2	Maintenance Rack
		11B23-3	Radar Pressurization
11B13	CONVERTERS		
11B13-2	Coordinate	11B24	MODULATORS
11B13-3	Polar		
11B13-4	Signal Data	11B25	MOUNTINGS
11B13-5	Speed	11B25-2	JETDS Nomenclatured
11B13-6	Temperature		
11B13-7	Telemetry	11B26	MOUNTS
11B13-8	Type MA-2 and ASB-4	11B26-2	Sight
11B14	CORRECTORS	11B28	POWER SUPPLIES
11B14-2	Bombsight	11B28-2	Low Voltage
		11B28-3	High Voltage
11B15	COUPLERS	11B28-4	Analyzer
11B15-2	Nondirectional	11B28-5	Auxiliary
11B15-3	Directional		
		11B29	RACKS
11B16	COVERS	11B29-2	Amplifier
11B16-2	Bombsight	11B29-3	Bomb
11B17	DESICCATORS	11B30	RADAR ASSEMBLIES
11B17-2	Type B	11B30-2	JETDS Nomenclatured
11B17-3	Type MA		
		11B31	RADAR SETS
11B18	DOPPLER DRIFT GROUP	11B31-2	Type AN/APS
11B18-2	AN Type	11B31-3	Data Presentation
		11B31-4	Type AN/ASB
11B19	GENERATORS	11B31-5	Type AN/ASQ
11B19-2	Azimuth Mark		
11B19-3	Azimuth Sweep	11B32	RADIO SETS
11B19-4	Pedestal	11B32-2	JETDS Nomenclature
11B19-5	Pulse		
11B19-6	Range Mark	11B33	RECEIVERS
11B19-7	Sweep	11B33-2	Radar
11B19-8	Sine Wave	11B33-3	Radio
11B19-9	Stabilization Data		
11B19-10	Antenna	11B34	RECEIVER-TRANSMITTERS
11B19-11	Motor (Do not use)	11B34-2	Radar
11B19-12	Type MA-2 and ASB-4	11B34-3	Radio
11B19-13	Frequency	11B34-4	Television
11B19-14	Noise		
		11B35	RECEPTACLES
11B20	GYROSCOPES	11B35-2	Bomb Release
11B20-2	Cageable		
11B20-3	Noncageable	11B36	RECORDERS
		11B36-2	Video
11B21	INDICATORS	11B36-3	Light and Time
		11B36-4	Photo

11B37	REGULATORS	11B47-12	Control
11B37-2	Current	11B47-13	Distribution
11B37-3	Voltage	11B47-14	Weapons Release
11B38	RELEASES	11B48	VISORS
11B38-2	Bomb Rack	11B49	ATTACHMENTS
11B38-3	Bomb Shackle	11B49-2	Camera
11B39	SELECTORS	11B50	PROTECTORS
11B39-2	Bomb Group	11B50-2	Electrical
11B39-3	Bomb Rack	11B51	NETWORKS
11B40	SHACKLES	11B51-2	Network Assemblies
11B40-2	100- to 1600- pound Capacity	11B52	BLOWERS AND FANS
11B40-3	2000- to 5000- pound Capacity	11B52-2	Radar
11B40-4	4000- to 9000- pound Capacity	11B52-3	Electrical
11B41	SIGHTS	11B53	CALIBRATORS
11B41-2	M Type	11B54	RELAY ASSEMBLIES
11B41-3	S Type	11B55	BLANKERS
11B41-4	T Type	11B56	MULTIMETERS
11B41-5	Y Type	11B57	TELESCOPES
11B41-6	MA-2 and ASB-4	11B58	MIRROR ASSEMBLIES
11B41-7	Illuminated	11B59	EJECTORS
11B42	STABILIZERS	11B60	ELECTRONIC GATES
11B42-2	Periscopic Bombsight	11B61	PANELS
11B42-3	Optics	11B61-2	Control
11B42-4	Navigation	11B62	PERISCOPES
11B43	SYNCHRONIZERS	11B63	ACCELEROMETERS
11B43-2	Type SN-()/APS	11B64	TRANSDUCER ASSEMBLIES
11B43-3	Antenna	11B65	TRANSFORMER-RECTIFIER ASSEMBLIES
11B43-4	Electrical	11B66	PLATFORMS
11B44	TIMERS	11B67	FANS (Use 11B52)
11B44-2	Type A	11B68	ANALYZERS
11B44-3	Time Meters	11B68-2	Polar Converter
11B44-4	Bombing	11B68-3	Phase Shifter
11B44-5	Firing Mechanism	11B68-4	Synchronizer
11B45	TRANSFORMERS	11B69	OPTICS GROUPS
11B46	TRANSMITTERS	11B70	DYNAMOTOR ASSEMBLIES
11B46-2	Altitude Variation, Airspeed	11B71	CAMERA SYSTEMS
11B46-3	True Heading	11B72	REPEATERS
11B46-4	Remote Compass	11B72-2	Radio
11B46-5	Radio	11B72-3	Pitch Angle
11B46-6	Antenna	11B73	SWITCHES
11B46-7	Radar	11B73-2	Waveguide
11B47	UNITS	11B74	DEMODULATORS
11B47-2	Antenna Drive	11B74-2	Altitude Control
11B47-3	Filter		
11B47-4	Offset		
11B47-5	Phase Shift		
11B47-6	Magnetron Drive		
11B47-7	Stores		
11B47-8	Delay		
11B47-9	Stabilized		
11B47-10	Navigation		
11B47-11	Monitor		

11B75	MOTORS	11C3	CHEMICAL WARFARE EXPLOSIVES
11B75-2	Comparator	11C4	FLAME THROWERS
11B75-3	Blower	11C4-2	Portable
11B75-4	Drive	11C4-3	Mechanized
11B75-5	Indicator	11C5	GASES
11B75-6	Servo	11C5-2	Blister
11B76	CASES	11C5-3	G Series
11B76-2	Motor Gear	11C5-4	Mustard and Derivatives
11B77	SLINGS	11C5-5	Tear
11B78	FRAMES	11C6	GENERATORS
11B79	DISPLAYS	11C6-2	Smoke
11B80	INTEGRATORS	11C7	GRENADES
11B81	RELEASE MECHANISMS	11C7-2	Frangible
11B82	CHASSIS ASSEMBLIES	11C7-3	Incendiary
11B83	EVALUATORS	11C7-4	Smoke
11B84	WAVEGUIDES	11C8	HANDLING EQUIPMENT
11B85	PACKAGES	11C8-2	Containers
11B85-2	Data	11C8-3	Hoists
11B85-3	Camera	11C8-4	Kits
11B85-4	Doppler Radar	11C8-5	Maintenance Sets
11B86	CAMERA PACKAGES (Use 11B85-3)	11C8-6	Mixing, Transfer Units
11B87	CHAIN AND HOOK ASSEMBLIES	11C8-7	Dispensers, Dispersers
11B88	ASTROTRACKERS (Use 5N2)	11C9	INCENDIARIES
11B89	ALTIMETERS	11C9-2	Mixing and Transfer Kits, Fuel
11B89-2	Radio	11C9-3	Document Destroyers
11B90	NETWORKS (See 11B51 also)	11C10	(RESERVED)
11B90-2	Camera	11C11	MORTARS
11B91	DIGITALIZERS	11C12	GENERATORS
11B91-2	Data	11C12-2	Smoke
11B92	FILTERS	11C13	SMOKE POTS
11B92-2	Radar	11C14	SMOKES
11B92-3	Radio	11C14-2	Screening
11B93	SCANNERS	11C15	TANKS
11B94	INFRARED ASSEMBLIES	11C15-2	Smoke
11B95	ADAPTERS AND PLUG-IN UNITS	11C15-3	Liquid Agent Spray
11B96	MATRIX ASSEMBLIES	11C15-4	Power Spray (Dry)
11C	CHEMICAL WARFARE AGENTS, EXPLOSIVES, GASES AND WEAPONS	11C16	DISCHARGERS
11C1	CHEMICAL WARFARE AGENTS	11C17	VALVES
11C2	CHEMICAL WARFARE BOMBS	11C18	ACTUATOR
11C2-2	Gas	11D	DECONTAMINATING, IMPREGNATING, AND PROTECTIVE EQUIPMENT
11C2-3	Incendiary	11D1	DECONTAMINATING EQUIPMENT
11C2-4	Smoke	11D1-2	Delousing
		11D1-3	Portable
		11D1-4	Truck Mounted
		11D1-5	Skid Mounted
		11D1-6	Trailer Mounted

11D2	IMPREGNATING EQUIPMENT	11F4-22	Interrogator
11D2-2	Impregnites	11F4-23	Counter
11D2-3	Impregnating Plants	11F5	ANTENNAS
11D3	PROTECTIVE EQUIPMENT	11F6	ASSEMBLIES
11D3-2	Protectors	11F6-2	Tail Section
11D3-3	Shelters	11F7	BLOWERS
11E	BIOLOGICAL WARFARE AGENTS	11F8	BOXES
11E1	NOT USED	11F8-2	Control
11E2	BOMBS	11F8-3	Firing
11E3	AGENTS	11F8-4	Junction, Interconnecting
11F	FIRE CONTROL SYSTEMS AND EQUIPMENT	11F8-5	Terminal
11F1	FIRE CONTROL SYSTEMS	11F9	PROGRAMMERS (Use 11F97)
11F1-A	Type A	11F10	CENTRAL SYSTEMS
11F1-B	Type B	11F10-2	Computer
11F1-C	Type C	11F10-3	Fire Control
11F1-E	Type E	11F10-4	Indicator
11F1-F	Type F	11F10-5	Power
11F1-M	Type M	11F10-6	Radar
11F1-P	Type P	11F10-7	Servo
11F1-T	Type T	11F10-8	Auxiliary
11F2	ACCELEROMETERS	11F11	COMPRESSED AIR SYSTEMS
11F2-2	Lift	11F12	COMPUTERS
11F2-3	Voltage	11F12-2	Angle of Attack
11F2-4	Gravity Drop	11F12-3	Flight Data
11F2-5	Cageable	11F12-4	Free Gyroscope
11F3	ADAPTERS (See 11F64 also)	11F12-5	Range
11F3-2	Range Servo	11F12-6	Sight
11F3-3	Sight	11F12-7	Turret
11F3-4	Test	11F12-8	Interceptor Fighting, Fixed
11F3-5	Radar	11F12-9	Air Navigation
11F3-6	Detector	11F12-10	Altitude
11F4	AMPLIFIERS	11F12-11	Gun Data
11F4-2	Audio Frequency	11F12-12	Terminal Box
11F4-3	Electronic Control	11F12-13	Target Position
11F4-4	Intermediate Frequency	11F12-14	Analog
11F4-5	Preamplifier	11F12-15	Air Data
11F4-6	Servo	11F12-16	Launch
11F4-7	Sight	11F12-17	Toss Bomb (Use 11B10)
11F4-8	Computer	11F12-18	Roll Error
11F4-9	Antenna Control	11F12-19	Jump Angle
11F4-10	Synchro Signal	11F12-20	Annunciator
11F4-11	Resolver	11F12-21	Servo
11F4-12	Automatic Frequency	11F12-22	Digital
11F4-13	Deflection	11F12-23	Signal
11F4-14	Power Supply	11F12-24	Armament Control
11F4-15	Gyroscope	11F12-25	Programmer
11F4-16	Steering Signal	11F13	CONTROLS
11F4-17	Attack Display	11F13-2	Amplifier
11F4-18	Memory	11F13-3	Antenna
11F4-19	Video	11F13-4	Console Switching
11F4-20	Oscillator Control	11F13-5	Hydraulic Range
11F4-21	Transponder	11F13-6	Indicator
		11F13-7	Range
		11F13-8	Power Supply

11F13-9	Radar Set	11F24	INDICATOR CIRCUITS
11F13-10	Roll and Pitch	11F25	KITS
11F13-11	Intervalometer	11F25-2	Mounting
11F13-12	Remote	11F25-3	Pressurizing
11F13-13	Flight Monitor	11F25-4	Suppressor
11F13-14	Computer	11F25-5	Harmonization
11F13-15	Remote Controls (Use 11B13-12)	11F26	LINES
11F13-16	Automatic Frequency	11F26-2	Delay
11F13-17	Missile	11F26-3	Transmission
11F13-18	Altitude	11F27	MIXERS
11F13-19	Selector	11F27-2	Duplexer
11F13-20	Receiver	11F27-3	Frequency
11F13-21	Roll Rate	11F28	MODULATORS
11F13-22	Rate of Turn	11F29	MOTORS
11F13-23	Positioning	11F29-2	AC Induction
11F13-24	Signal	11F29-3	Fractional Horsepower
11F13-25	Intercommunication	11F29-4	Direct-Current
11F13-26	Radio Set	11F29-5	Hydraulic
11F13-27	Alarm	11F29-6	Rotating
11F13-28	Coder-Decoder	11F30	MOTOR GENERATORS
11F13-29	System	11F30-2	Amplidyne
11F13-30	Action Range	11F30-3	Type PU
11F13-31	Equipment Package	11F30-4	Transformer
11F13-32	Laser	11F30-5	Pulse Sweep
11F14	CONTROLLERS	11F30-6	Amplifier Sweep
11F14-2	Antenna	11F30-7	Indicator Sweep
11F14-3	Gun Sight	11F30-8	Pulse Clock
11F14-4	Thyratron	11F30-9	Radar
11F14-5	Altitude Differential	11F30-10	Tachometer
11F14-6	Missile	11F30-11	Induction
11F15	CONVERTERS AND GENERATORS	11F30-12	Range Function
11F15-2	Frequency	11F31	MOUNTINGS AND MOUNTS
11F15-3	Signal Data	11F32	PANELS
11F15-4	Angle Data	11F32-2	Control
11F15-5	Auto Gain Control, Waveform	11F32-3	Test
11F15-6	Static	11F33	POWER SUPPLIES
11F16	CORDS	11F33-2	Amplifier
11F17	DESICCATORS	11F33-3	Computer
11F17-2	Sight	11F33-4	Indicator
11F18	FILTERS AND REACTORS	11F33-5	Low Voltage
11F19	GRIPS	11F33-6	Type E-9
11F19-2	Ranging Throttle	11F33-7	Track
11F20	GYROSCOPES	11F33-8	Search
11F21	HEADS	11F33-9	Precision
11F21-2	Radio Frequency	11F33-10	High Voltage
11F21-3	Sight	11F33-11	Television
11F21-4	Optical	11F33-12	Transistor
11F22	HORNS	11F33-13	Control
11F22-2	Antenna	11F33-14	Auxiliary
11F23	INDICATORS	11F33-15	Multiple Voltage
11F23-2	Cathode Ray	11F33-16	Static Voltage Regulator
11F23-3	Meter	11F33-17	Hydraulic
11F23-4	Target		

11F34	PUMPS	11F47-12	Logic Control
11F35	RADAR SETS	11F47-13	Display
11F35-2	Gun Laying	11F47-14	Alignment
11F35-3	Search, Navigation	11F47-15	Weapons Delivery Control
11F35-4	Track	11F48	VISORS
11F36	RECEIVER-TRANSMITTERS	11F49	WAVEGUIDES
11F37	REGULATORS	11F50	DETECTORS
11F37-2	AC Voltage	11F50-2	Angle of Attack
11F37-3	DC Voltage	11F50-3	Infrared
11F37-4	Flight Control	11F50-4	Laser
11F38	SERVOS	11F51	RELAY ASSEMBLIES
11F38-2	Range	11F52	OSCILLATORS
11F38-3	Roll	11F53	SUPPRESSORS
11F39	SIGHTS	11F54	ATTENUATORS
11F39-2	Automatic Computing	11F55	RACKS
11F39-3	Compensating	11F55-2	Electrical
11F39-4	Noncomputing	11F55-3	Amplifier
11F39-5	Interpupillometer	11F55-4	Dehydrator, Filter
11F39-6	Infrared	11F56	POTENTIOMETERS
11F39-7	Periscope	11F56-2	Radar Equipment
11F40	SIGHTING STATIONS	11F57	TRANSDUCERS
11F40-2	Hemisphere	11F57-2	Pressure
11F40-3	Pedestal	11F58	CABINETS
11F40-4	Periscopic	11F58-2	Utility
11F40-5	Yoke	11F59	HEATERS
11F41	SIMULATORS	11F59-2	Cabinet
11F41-2	Gun Sight	11F60	POINTERS
11F42	SYNCHRONIZERS	11F60-2	Line of Sight
11F43	TEST SETS (Use 33D5)	11F61	COLUMNS
11F44	TRANSFORMERS	11F61-2	Control
11F44-2	Power	11F62	COMPENSATORS
11F44-3	Pulse	11F62-2	Angle of Attack
11F44-4	Synchronizer	11F63	COUPLERS
11F45	TRANSMITTERS	11F64	ADAPTERS (Use 11F3)
11F45-2	Radar	11F65	WIND DIRECTION SETS
11F45-3	Pressure	11F66	FIGHTER MISSILE SYSTEMS
11F45-4	Radio	11F67	BOOSTERS
11F45-5	Range	11F68	VALVES
11F45-6	Bearing	11F69	RECEIVERS
11F46	TURRETS	11F70	TUNERS
11F47	UNITS	11F71	RESOLVERS
11F47-2	Range	11F72	MECHANISMS
11F47-3	Resolver	11F73	TELEVISION CAMERAS
11F47-4	Rocket Setting	11F74	HANDLES
11F47-5	Sight Drive		
11F47-6	Sight Selector		
11F47-7	Timer		
11F47-8	Switching		
11F47-9	Radar Indicator		
11F47-10	Electronic Warning		
11F47-11	Television Monitor		

11F75	TELEVISION SYSTEMS	11G2-2	System
11F76	MEMORY DEVICES	11G2-3	Control, Technical
11F76-2	Register	11G2-4	Forward Emanating
11F76-3	Drum	11G2-5	Midcourse
11F77	ELECTRONIC CLUTTER SETS	11G2-6	Nonemanating
11F78	BARORESISTOR	11G2-7	Full Course
11F79	COMPARATORS	11G2-8	Mark I
11F80	DUCT ASSEMBLIES	11G2-9	Airborne
11F81	SWITCHES	11G2-10	Inertial
11F81-2	Electronic	11G3	WARHEAD TRANSPORT VEHICLE (Do not use - See 36A11)
11F81-3	Relay	11G4	OPTICAL-MECHANICAL ELECTRONIC
11F81-4	Radio	11G5	BOX ASSEMBLIES
11F81-5	Pressure	11G5-2	Junction
11F81-6	Waveguide	11G5-3	Control
11F82	METERS	11G6	COMPUTERS
11F83	CLUTCHES	11G6-2	Digital
11F84	DEMODULATORS	11G6-3	Electronic
11F85	EVALUATORS	11G6-4	Gyro
11F86	PHOTOGRAPHIC RECORDERS	11G6-5	Velocity
11F87	SELECTORS	11G6-6	Signal
11F87-2	Target	11G6-7	Transverse
11F88	MANIFOLDS	11G6-8	Elevation
11F89	CODER-DECODERS	11G7	CONTROLS
11F90	DRIVE ASSEMBLIES	11G7-2	Surface
11F91	ISOLATORS	11G7-3	Arming
11F92	BOTTLE ASSEMBLIES	11G7-4	Tracker
11F93	TANKS	11G7-5	Bank Angle
11F94	HOSES	11G7-6	Nozzle
11F95	SEALS	11G7-7	Guided Bomb
11F96	CARTRIDGES	11G8	AMPLIFIERS
11F96-2	Toss Bomb Computer	11G8-2	Signal
11F97	PROGRAMMERS (See 11F9 also)	11G8-3	Control
11F98	DISPLAY SETS	11G8-4	Astrotracker
11F99	TRACKING SETS	11G8-5	Platform
11F100	PLOTTING BOARDS	11G8-6	Digital
11F101	PROCESSORS	11G8-7	Electronic Control
11G	GUIDANCE AND CONTROL SYSTEMS AND EQUIPMENT	11G8-8	Magnetic
11G1	CONTROL SYSTEMS	11G8-9	Power
11G1-2	System	11G8-10	Servo
11G1-3	Flight Control	11G8-11	Preamplifiers
11G2	GUIDANCE SYSTEMS	11G9	POWER SUPPLIES
		11G9-2	Electrical
		11G9-3	Pneumatic
		11G9-4	Hydraulic
		11G10	PLATFORMS
		11G10-2	Scanner
		11G10-3	Stable
		11G10-4	Sensing
		11G11	GYROSCOPES
		11G11-2	Inertial
		11G11-3	Vertical
		11G11-4	Rate

11G12	ACTUATOR (PACKAGE) ASSEMBLIES	11G31-2	Servo Trim
11G12-2	Not Used	11G32	DETECTORS
11G12-3	Elevon	11G33	MODULE ASSEMBLIES
11G12-4	Stabilizer	11G34	DISCRIMINATORS
11G12-5	Spoiler	11G35	SIGNAL CONDITIONERS
11G13	OPERATING MECHANISMS	11G36	OSCILLATORS
11G13-2	Spoiler	11G37	DISTRIBUTION ASSEMBLIES
11G14	INSTRUMENTS	11G38	TRANSDUCERS
11G14-2	Range Safety	11G39	CABLE ASSEMBLIES
11G14-3	Inertial	11G40	CHASSIS ASSEMBLIES
11G14-4	Accelerometer	11G41	INTERCONNECT ASSEMBLIES
11G15	GIMBAL ASSEMBLIES	11G42	CIRCUIT CARD ASSEMBLIES
11G16	SWITCH ASSEMBLIES	11G43	TARGET DETECTING DEVICES
11G17	RACKS	11H	HAZARD DETECTING EQUIPMENT
11G17-2	Electrical	11H1	BIOLOGICAL DETECTING EQUIPMENT
11G17-3	Electronic	11H2	CHEMICAL DETECTING EQUIPMENT
11G18	PANELS	11H3	MINE DETECTING EQUIPMENT
11G18-2	Electrical	11H4	RADIOLOGICAL DETECTING EQUIPMENT
11G19	CELESTIAL NAVIGATION	11H4-2	Radiac
11G19-2	Astrotrackers	11H4-3	Computer Indicator
11G20	CONVERTERS	11H4-4	Counter
11G21	PROGRAMMERS	11H4-5	Densitometer
11G22	UNITS	11H4-6	Dosimeter
11G22-2	Transfer	11H4-7	Meter
11G22-3	Flight Control (Use 11G1)	11H4-8	Radioactive Test Sample
11G22-4	Measurement	11H4-9	Container
11G22-5	Processor, Distributor	11H4-10	Vapotester
11G22-6	Regulator	11H4-11	Monitor
11G22-7	Station Program	11H5	INDUSTRIAL HAZARDS DETECTING EQUIPMENT
11G23	FANS AND BLOWERS	11K	GUIDED GLIDE WEAPONS
11G23-2	Blower	11K1	AIR LAUNCHED
11G24	GENERATORS	11K2	GUIDED BOMBS, TYPE GBU-2
11G24-2	Tracking	11K10	GUIDED BOMBS, TYPE GBU-10
11G24-3	Motor	11K15	GUIDED BOMBS, TYPE GBU-15
11G24-4	Pulse	11K20	GUIDED BOMBS, TYPE GBU-20, -22, & -24
11G24-5	Signal	11K25	GUIDED BOMBS, TYPE GBU-27/B
11G25	REGULATING DEVICES	11K28	GUIDED BOMBS, TYPE GBU-28A/B
11G25-2	Voltage	11K31	GUIDED BOMBS, TYPE GBU-31
11G25-3	Chronometers		
11G26	RECEIVERS AND TRANSMITTERS		
11G26-2	Data		
11G27	SERVOS		
11G28	TIMER ASSEMBLIES		
11G29	REFERENCES		
11G29-2	3-Axis		
11G30	RELAYS		
11G31	REGISTER ASSEMBLIES		

11K36	GUIDED BOMBS, TYPE GBU-36	11P8	FIRING MECHANISMS
11L	LAUNCHERS AND EQUIPMENT	11P9	GENERATORS, MOTORS, ACTUATORS
11L1	AIRBORNE LAUNCHERS	11P10	RETRACTORS
11L1-2	Missile	11P11	BOOMS
11L1-3	Rocket	11P12	CUTTERS AND BOLTS
11L1-4	Dispensing	11P13	TRANSMITTERS
11L1-5	Flare	11P14	INERTIAL REELS
11L2	GROUND LAUNCHERS	11P15	DEPLOYMENT GUNS (DROGUE GUN)
11L2-2	Grenade	11P16	FUSES
11L2-3	Missile	11P17	LEAD ASSEMBLIES
11L2-4	Rocket	11P18	MANIFOLDS
11L2-5	Rotary	11P19	EXPLOSIVE KITS
11L3	CONTROLS	11P20	SINGLE POINT HARNESS RELEASES
11L3-2	Projector Release	11P21	SEVERANCE SYSTEMS
11L3-3	Missile Launcher	11P22	SEQUENCE SELECTORS
11L4	MOUNTS	11R	MISSILE RE-ENTRY VEHICLES AND EQUIPMENT (Do not use)
11LA	ASSOCIATED EQUIPMENT	11W	WEAPONS AND EQUIPMENT
11LA1	TABLES	11W1	AIRBORNE WEAPONS AND EQUIPMENT
11LA1-2	Firing	11W1-2	Adapter
11LA2	CYLINDERS	11W1-3	Booster
11LA3	HOISTS	11W1-4	Charger
11LA4	GENERATORS	11W1-5	Chute
11LA5	EJECTORS	11W1-6	Container
11LA6	ROCKET RACKS	11W1-7	Feeder
11LA7	POWER SUPPLIES	11W1-8	Gauge
11LA8	ADAPTERS	11W1-9	Generator
11LA9	STATIONS	11W1-10	Grip
11LA10	CABLES	11W1-11	Heater
11LA11	CHASSIS ASSEMBLIES	11W1-12	Heavy Caliber Gun
11LA12	RELAY ASSEMBLIES	11W1-13	Light Caliber Gun
11LA13	SWITCHING UNITS	11W1-14	Machine
11LA14	LAUNCHER ROTATION TOOLS	11W1-15	Mount
11P	EGRESS SYSTEMS, EXPLOSIVE DEVICES, AND EQUIPMENT	11W1-16	Pyrotechnic
11P1	CATAPULTS	11W1-17	Solenoid
11P2	EJECTORS	11W1-18	Switch
11P3	INITIATORS AND TIMERS	11W1-19	Synchronizer
11P3-2	Delay	11W1-20	Tool (Breech Block Unlocking)
11P3-3	Instant	11W1-21	Valve
11P4	REMOVERS (CANOPY)	11W1-22	Winder-Feeder
11P5	SQUIBS AND BLASTING CAPS	11W1-23	Recoil
11P6	THRUSTERS	11W1-24	Charger
11P7	CARTRIDGES	11W1-25	Rack
		11W1-26	Tool (Ammo Reel Loading)

11W1-27	Control	11W3	SMALL ARMS
11W1-28	Gun Drive	11W3-2	Carbine
11W1-29	Assembly	11W3-3	Pistol
11W1-30	Counter	11W3-3-2	.22 Caliber
11W1-31	Armament Pod	11W3-3-3	.45 Caliber
11W1-32	Armament Module	11W3-3-4	9MM
11W1-33	Armament System	11W3-4	Revolver
11W1-34	Armament Kit	11W3-4-2	.38 Caliber
11W1-35	Drum Drive	11W3-4-3	.45 Caliber
11W1-36	Lubricator	11W3-5	Rifle
11W1-37	Expended Case Bin	11W3-5-2	.22 Caliber
11W2	GROUND WEAPONS AND EQUIPMENT	11W3-5-3	.30 Caliber
11W2-2	Activator	11W3-5-4	7.62MM
11W2-3	Bayonet and Knife	11W3-5-5	5.56MM
11W2-4	Clinometer	11W3-6	Shotgun
11W2-5	Heavy Caliber Gun	11W3-6-2	12-Gauge
11W2-6	Light Caliber Gun	11W3-6-3	16-Gauge
11W2-7	Machines, Repositioning- and Linking-	11W3-7	Submachine Gun
11W2-8	Mount	11W3-8	Line Throwing Gun
11W2-9	Pyrotechnic	11W3-9	Grenade Launcher
11W2-10	Quadrant	11WA	WEAPONS ASSOCIATED EQUIPMENT
11W2-11	Self-Propelled	11WA1	FIRING TABLES
11W2-12	Rack	11WA1-2	Heavy Caliber
11W2-13	Sight	11WA1-3	Light Caliber
11W2-14	Slide Rule	11WA1-4	Mortar
11W2-15	Sniperscope	11WA1-5	Rifle
11W2-16	Solenoid	11WA2	CAMOUFLAGE EQUIPMENT
11W2-17	Adapter	11WA3	POWER UNIT
11W2-18	Director		

CHAPTER 15

CATEGORY 12 - AIRBORNE ELECTRONIC EQUIPMENT

15-1 GENERAL.

15-1.1 Much of the equipment covered by TOs in this category is identified under the Joint Electronics Type Designation System (JETDS). The JETDS, formerly known as the AN nomenclature system, is described in MIL-STD-196D.

15-1.2 Category 12 contains seven primary airborne electronic equipment systems. These systems are divided into equipment series and further divided into equipment subseries within each equipment series. TO numbers in Category 12 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 15-2.

15-1.3 TO data pertaining to more than one system is numbered in the category general series.

15-1.4 Information relating to more than one equipment series is numbered in the system general series.

15-1.5 General TOs for JETDS equipment are described in paragraph 1-23.

15-2 NUMBERING PATTERNS.

15-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

15-2.1.1 Part one is always the numeric 12 identifying Category 12.

15-2.1.2 Part two is an alpha character identifying the electronic system, i.e., A - synchros and resolvers; C - crystal units; M - meteorological equipment; P - radar equipment; R - radio equipment; and S - special electronic equipment.

15-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 15-4.

15-2.2 GROUP TWO. TO numbering patterns in Category 12 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following explains both numbering patterns:

15-2.2.1 If the equipment types are JETDS nomenclatured, only three basic groups are used in

the TO number. The numeric 2 followed immediately by an alphameric JETDS nomenclature comprises group two.

15-2.2.2 If the equipment types are Signal Corps nomenclatured, three basic groups are used in the TO number. The numeric 3 followed immediately by an alphameric Signal Corps nomenclature comprises group two.

15-2.2.3 If the equipment types are Air Force nomenclatured, three basic groups are used in the TO number. The numeric 5 followed immediately by an alphameric AF nomenclature comprises group two.

15-2.2.4 Where the equipment types are commercially nomenclatured, four basic groups are used in the TO number and the numeric 4 is the only character in group two.

15-2.3 GROUP THREE.

15-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 12:

- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Alignment Manuals

15-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 12:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

15-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment or components. When this occurs the specific types of TOs are then identified in group four.

15-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 15-2.3.1, above.

15-3 EXAMPLES OF CATEGORY 12 NUMBERING PATTERNS.

15-3.1 A service instruction manual with illustrated parts breakdown for a radiosonde receiver, model RC-1074:

12M1-4-9-2

12	Category 12
M	Meteorological Equipment
1	Auxiliary Equipment Series
4	Identifies Commercial Data
9	Represents Model RC-1074
2	Number Reserved for Service Instruction

15-3.2 Illustrated parts breakdown for a terrain following radar set, type AN/APQ-128:

12P2-2APQ128-34

12	Category 12
P	Radar Equipment
2	Control Equipment Series
2	JETDS Nomenclature Equipment
APQ128	Identifies Specific Terrain Following Radar Set
34	Number Reserved for Illustrated Parts Breakdown

15-3.3 Operating and maintenance instructions with illustrated parts breakdown for electronic countermeasure set, type QRC-128A(T):

12P3-5QRC128-1

12	Category 12
P	Radar Electronic Equipment
3	Electronic Countermeasure Series
5	JETDS Nomenclature Equipment
QRC128	Identifies Specific Electronic Countermeasure Set
1	Number Reserved for Operating Instructions

15-3.4 Operating and maintenance instructions and illustrated parts breakdown for an airborne radio set, type AN/ARC-59:

12R2-2ARC59-1

12	Category 12
R	Radio Equipment
2	Communication Series
2	JETDS Nomenclature Equipment
ARC59	Identifies a Specific Radio Set
1	Number Reserved for Operating Instructions

15-4 CATEGORY 12 NUMBERING SERIES.

12	AIRBORNE-ELECTRONIC EQUIPMENT
12A	SYNCHRONIZERS AND RESOLVERS
12A1	SYNCHRONIZERS
12A2	RESOLVERS
12C	CRYSTAL UNITS
12M	METEOROLOGICAL-ELECTRONIC EQUIPMENT, AIRBORNE
12M1	AUXILIARY EQUIPMENT
12M1-2	JETDS Nomenclature
12M1-3	Signal Corps Nomenclature
12M1-4	Commercial Nomenclature
12M1-5	AF Nomenclature
12M2	BAROMETRIC
12M2-2	JETDS Nomenclature
12M2-3	Signal Corps Nomenclature
12M2-4	Commercial Nomenclature
12M2-5	AF Nomenclature
12M3	TEMPERATURE AND HUMIDITY
12M3-2	JETDS Nomenclature
12M3-3	Signal Corps Nomenclature
12M3-4	Commercial Nomenclature
12M3-5	AF Nomenclature
12M4	WIND DIRECTION AND VELOCITY
12M4-2	JETDS Nomenclature
12M4-3	Signal Corps Nomenclature
12M4-4	Commercial Nomenclature
12M4-5	AF Nomenclature
12M5	ATMOSPHERIC RESEARCH
12M5-2	JETDS Nomenclature
12M5-3	Signal Corps Nomenclature
12M5-4	Commercial Nomenclature
12M5-5	AF Nomenclature
12P	RADAR-ELECTRONIC EQUIPMENT
12P1	AUXILIARY EQUIPMENT

12P1-2	JETDS Nomenclature	12R4-5	AF Nomenclature
12P1-3	Signal Corps Nomenclature	12R5	NAVIGATION
12P1-4	Commercial Nomenclature	12R5-2	JETDS Nomenclature
12P1-5	AF Nomenclature	12R5-3	Signal Corps Nomenclature
12P2	CONTROLS	12R5-4	Commercial Nomenclature
12P2-2	JETDS Nomenclature	12R5-5	AF Nomenclature
12P2-3	Signal Corps Nomenclature	12R6	RELAY
12P2-4	Commercial Nomenclature	12R7	DRONE MISSILE
12P2-5	AF Nomenclature	12S	SPECIAL-ELECTRONIC EQUIPMENT
12P3	ELECTRONIC COUNTERMEASURES	12S1	AUXILIARY
12P3-2	JETDS Nomenclature	12S1-2	JETDS Nomenclature
12P3-3	Signal Corps Nomenclature	12S1-3	Signal Corps Nomenclature
12P3-4	Commercial Nomenclature	12S1-4	Commercial Nomenclature
12P3-5	AF Nomenclature	12S1-5	AF Nomenclature
12P4	IFF	12S2	DATA PROCESSING
12P4-2	JETDS Nomenclature	12S2-2	JETDS Nomenclature
12P4-3	Signal Corps Nomenclature	12S2-3	Signal Corps Nomenclature
12P4-4	Commercial Nomenclature	12S2-4	Commercial Nomenclature
12P4-5	AF Nomenclature	12S2-5	AF Nomenclature
12P5	NAVIGATION	12S3	LIGHT OR HEAT
12P5-2	JETDS Nomenclature	12S4	MAGNETIC
12P5-3	Signal Corps Nomenclature	12S5	RECORDING
12P5-4	Commercial Nomenclature	12S5-2	JETDS Nomenclature
12P5-5	AF Nomenclature	12S5-3	Signal Corps Nomenclature
12P6	SEARCH AND HEIGHT FINDING	12S5-4	Commercial Nomenclature
12P6-2	JETDS Nomenclature	12S5-5	AF Nomenclature
12P6-3	Signal Corps Nomenclature	12S6	TELEVISION
12P6-4	Commercial Nomenclature	12S6-2	JETDS Nomenclature
12P6-5	AF Nomenclature	12S6-3	Signal Corps Nomenclature
12R	RADIO-ELECTRONIC EQUIPMENT, AIRBORNE	12S6-4	Commercial Nomenclature
12R1	AUXILIARY EQUIPMENT	12S6-5	AF Nomenclature
12R1-2	JETDS Nomenclature	12S7	TELEMETERING
12R1-3	Signal Corps Nomenclature	12S7-2	JETDS Nomenclature
12R1-4	Commercial Nomenclature	12S7-3	Signal Corps Nomenclature
12R1-5	AF Nomenclature	12S7-4	Commercial Nomenclature
12R2	COMMUNICATIONS	12S7-5	AF Nomenclature
12R2-2	JETDS Nomenclature	12S8	TAPEWRITERS
12R2-3	Signal Corps Nomenclature	12S9	MISSILE OFFENSIVE SYSTEMS
12R2-4	Commercial Nomenclature	12S10	NIGHT VISION
12R2-5	AF Nomenclature	12S10-2	JETDS Nomenclature
12R3	CONTROLS	12S10-3	Signal Corps Nomenclature
12R3-2	JETDS Nomenclature	12S10-4	Commercial Nomenclature
12R3-3	Signal Corps Nomenclature	12S10-5	AF Nomenclature
12R3-4	Commercial Nomenclature	12S12	SECURE COMMUNICATION EQUIPMENT
12R3-5	AF Nomenclature	12S12-2	JETDS Nomenclature
12R4	ELECTRONIC COUNTERMEASURES	12S12-3	Signal Corp Nomenclature
12R4-2	JETDS Nomenclature	12S12-4	Commercial Nomenclature
12R4-3	Signal Corps Nomenclature		
12R4-4	Commercial Nomenclature		

CHAPTER 16

**CATEGORY 13 - AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING EQUIPMENT,
CARGO LOADING, AERIAL DELIVERY AND RECOVERY EQUIPMENT,
AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT**

16-1 GENERAL.

16-1.1 Category 13 contains five primary systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 13 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 16-2.

16-1.2 TO data pertaining to more than one system is numbered in the category general series.

16-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

16-2 NUMBERING PATTERNS.

16-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

16-2.1.1 Part one is always the numeric 13 identifying Category 13.

16-2.1.2 Part two is an alpha character identifying the system, i.e., A - aircraft furnishings; B - in-flight feeding equipment; C - cargo loading, tiedown and aerial delivery equipment; D - recovery equipment; and F - aircraft fire detection and extinguishing equipment.

16-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 16-4.

16-2.2 GROUP TWO. TO numbering patterns in Category 13 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

16-2.2.1 If the TO number uses only three basic groups, group two has one or more numeric characters representing the model, type or PN assigned to specific components.

16-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

16-2.3 GROUP THREE.

16-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 13:

-06	Work Unit Code Manuals
-07	thru -09 Reserved
-1	Operating Instructions
-2	Service or Maintenance Manuals
-3	Depot Maintenance or Overhaul Instructions
-4	Illustrated Parts Breakdown
-6	Inspection Requirements
-7	Installation Instructions

16-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 13:

CL	- Checklists
S	- Operational Supplements
SS	- Safety Supplements
WC	- Workcards

16-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

16-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 16-2.3.1, above.

16-3 EXAMPLES OF CATEGORY 13 NUMBERING PATTERNS.

16-3.1 An operation and service instruction manual for a food warming oven, model 200:

13B1-8-1

13 Category 13
 B In-Flight Feeding Equipment
 1 Food Warming Ovens
 8 Represents Model 200
 1 Number Reserved for Operating Instructions

16-3.2 An operating and maintenance manual for a cargo restraint barrier, type HBU-8/A:

13C2-5-1

13 Category 13
 C Cargo Loading Equipment
 2 Cargo Tiedown Devices
 5 Represents Type HBU-8/A
 1 Number Reserved for Operating Instructions

16-3.3 Overhaul instructions with illustrated parts breakdown for an aircraft fire extinguisher, PN 7720082-101:

13F3-4-13

13 Category 13
 F Aircraft Fire Detecting and Extinguishing Equipment
 3 Fixed Extinguishing System Series
 4 Represents PN 7720082-101
 13 Number Reserved for Overhaul Instructions

16-4 CATEGORY 13 NUMBERING SERIES.

13 AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING EQUIPMENT, CARGO LOADING, AERIAL DELIVERY AND RECOVERY EQUIPMENT, AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT

13A AIRCRAFT FURNISHINGS

13A1 BELTS, SAFETY AND SHOULDER HARNESES

13A2 PERSONNEL RELIEF FACILITIES

13A3 KITS, FIRST-AID

13A4 REELS, LOCKING, AIRCRAFT SEAT

13A5 EJECTION SEATS

13A6 ADJUSTABLE SEATS

13A7 TAIL GUNNER SEATS

13A8 EJECTION SEAT GUIDE RAILS AND TRACK ASSEMBLIES

13A9 COVERS

13A9-2 Canopy

13A9-3 Nose cap

13A9-4 Blade

13A9-5 Pod

13A9-6 Engine Shield

13A10 GUARDS AND SEALS

13A10-2 Engine

13A10-3 Escape Capsule System

13A11 ASTRODOMES

13A12 DISCONNECT ASSEMBLIES

13A13 VALVES

13A14 DEVICES

13A15 CONTAINERS

13A16 HEADREST ASSEMBLIES

13A17 STABILIZERS

13A18 STRAP ASSEMBLIES

13A19 SLIDE ASSEMBLIES

13A20 PLUMBING FIXTURES

13A21 SENSORS

13A22 COMPACTORS

13A23 TABLES

13B IN-FLIGHT FEEDING EQUIPMENT

13B1 FOOD WARMING OVENS

13B2 FOOD STORAGE UNITS

13B3 TEMPERATURE CONTROL REGULATORS

13B4 BUFFETS

13B5 REFRIGERATORS

13B6 BEVERAGE UNITS

13B7 WATER COOLERS

13B8 MOTORS AND PUMPS

13C CARGO LOADING, TIEDOWN, AND AERIAL DELIVERY EQUIPMENT

13C1 HOISTS AND CRANES

13C2 CARGO TIEDOWN DEVICES

13C3 AERIAL DELIVERY SYSTEMS

13C3-2 Monorail

13C3-3 Center Guide Rail

13C3-4 Dual Rail

13C4	CONTAINERS, AERIAL-DELIVERY	13C7-55	Motorcycle
13C5	PARACHUTES, AERIAL-DELIVERY	13C8	AERIAL PICK UP SYSTEMS
13C6	PARACHUTES AND CARGO DISCHARGERS	13C9	CARGO HOOKS
13C7	AERIAL DELIVERY KITS	13C10	UNLOADING KITS
13C7-1	Rigging	13C11	REELS
13C7-2	Truck	13C12	WEIGHT AND BALANCE EQUIPMENT
13C7-3	Trailer	13C13	ACTUATORS
13C7-4	Motor	13D	RECOVERY EQUIPMENT
13C7-5	Welding Set	13D1	SPACE VEHICLES
13C7-6	Tractor	13D2	AIR-TO-AIR RECOVERY EQUIPMENT
13C7-7	Water Purification Equipment	13D3	GROUND-TO-AIR RECOVERY EQUIPMENT
13C7-8	Electric Tool Set	13F	AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT
13C7-9	Shelter	13F1	FIRE DETECTOR SYSTEMS
13C7-10	Infantry Weapon	13F1-2	Fusible Alloy Detector
13C7-11	Bridge	13F1-3	Photoelectric
13C7-12	Rocket System	13F1-4	Thermocouple
13C7-13	Reeling Machine	13F1-5	Probe Detector
13C7-14	Radio Set	13F1-6	Dual Loop Thermistor
13C7-15	Air Compressor	13F2	SMOKE DETECTORS
13C7-16	Weapon Carrier	13F3	FIXED EXTINGUISHERS
13C7-17	Water Tank	13F3-2	Carbon Dioxide
13C7-18	Ammunition	13F3-3	Methyl Bromide
13C7-19	Rations, Petroleum, Oil and Lubricant	13F3-4	Bromochloromethane
13C7-20	Spat Gun	13F3-5	Carbon Tetrachloride
13C7-21	Rotary Tiller	13F3-6	Water
13C7-22	Missile, Rocket	13F3-7	Bromotrifluoromethane (Halon 1301)
13C7-23	Beacon Light	13F4	PORTABLE EXTINGUISHERS
13C7-24	Crane	13F4-2	Carbon Dioxide
13C7-25	Ambulance	13F4-3	Methyl Bromide
13C7-26	Road Roller	13F4-4	Bromochloromethane
13C7-27	Scraper, Grader	13F4-5	Carbon Tetrachloride
13C7-28	Boat	13F4-6	Water
13C7-29	Wrecker	13F5	CONTROL UNITS
13C7-30	Army Aircraft (Use 13C7-51)	13F6	CONTAINERS, FIRE EXTINGUISHER BOTTLES
13C7-31	Bucket Loader	13F7	VALVES
13C7-32	Rocket Launcher, Platform	13F8	RECEPTACLES
13C7-33	Mixer	13F9	PANELS
13C7-34	Medical Supply	13F10	DISCS
13C7-35	Warhead	13F11	SOLENOIDS
13C7-36	Instrument	13F12	REGULATORS
13C7-37	Container	13F13	PROBE ASSEMBLIES
13C7-38	Transporter	13F14	SERVICING UNITS
13C7-39	Bulk Materiel		
13C7-40	Generator Set		
13C7-41	Bath Unit		
13C7-42	Anti-Tank Weapon		
13C7-43	Test Set		
13C7-44	Amp Kit		
13C7-45	M-55 Rocket (Use 13C7-22)		
13C7-46	M-66 Rocket (Use 13C7-22)		
13C7-47	Atomic Weapon		
13C7-48	Radar Set		
13C7-49	Miscellaneous Air Drop		
13C7-50	Airfield Repair Kit		
13C7-51	Army Aircraft		
13C7-52	Platform		
13C7-53	Teletypewriter		
13C7-54	Forklift		

CHAPTER 17

CATEGORY 14 - DECELERATION DEVICES, PERSONAL AND SURVIVAL EQUIPMENT

17-1 GENERAL.

17-1.1 Category 14 contains three systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 14 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 17-2.

17-1.2 TO data pertaining to more than one system is numbered in the category general series.

17-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

17-2 NUMBERING PATTERNS.

17-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

17-2.1.1 Part one is always the numeric 14 identifying Category 14.

17-2.1.2 Part two is an alpha character identifying one of the three systems, i.e., D - deceleration devices; P - personal equipment; and S - survival equipment.

17-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 17-4.

17-2.2 GROUP TWO. TO numbering patterns in Category 14 use both three and four groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

17-2.2.1 If the TO number uses only three basic groups, group two has one or more numeric characters representing the model, type or PN assigned to specific components.

17-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case group two identifies the specific equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

17-2.3 GROUP THREE.

17-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 14:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions

17-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 14:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

17-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

17-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 17-2.3.1, above.

17-3 EXAMPLES OF CATEGORY 14 NUMBERING PATTERNS.

17-3.1 Inspection, maintenance and packing instructions for USAF personnel parachute, PN 811058-401:

14D1-2-1-106

14	Category 14
D	Deceleration Devices
1	Parachute Series
2	Personnel Subseries
1	Represents PN 811058-401
106	Number Reserved for Inspection Requirements

17-3.2 Operations, service and repair instructions for a high altitude helmet, type MA-2:

14P3-4-21

14 Category 14
 P Personal Equipment
 3 Clothing Series
 4 Represents Helmet Type MA-2
 21 Number Reserved for Operating Instructions

17-3.3 Maintenance manual for seven man life raft, PN D23810-103:

14S3-6-2-2

14 Category 14
 S Survival Equipment
 3 Life Raft Series
 6 Seven Man Series
 2 Represents PN D23810-103
 2 Number Reserved for Maintenance Instructions

17-4 CATEGORY 14 NUMBERING SERIES.

14 DECELERATION DEVICES,
 PERSONAL AND SURVIVAL
 EQUIPMENT

14D DECELERATION DEVICES

14D1 PARACHUTES

14D1-2 Personnel

14D1-3 Drag

14D1-4 Missile Component

14D2 AUTOMATIC RELEASE
 PARACHUTES

14D3 RECOVERY PARACHUTES

14D4 CARGO

14P PERSONAL EQUIPMENT

14P1 BAGS

14P2 BLANKETS

14P3 CLOTHING

14P3-2 Boots

14P3-3 Gloves

14P3-4 Helmet

14P3-5 Suit, Anti-Exposure

14P3-6 Suit, Pneumatic

14P3-7 Suit and Accessories, Heated

14P3-8 Suit, Flying Nonheated

14P3-9 Sun Glasses

14P3-10 Flying Jackets

14P3-11 Protective

14P3-12 Support Pads

14P4 MASKS, GAS

14P5 RESPIRATORS

14P6 ARMOR

14S SURVIVAL EQUIPMENT

14S1 KITS, EMERGENCY

14S2 PRESERVERS, (LIFE JACKETS)

14S2-2 Vest, Inflated

14S2-3 Underarm

14S2-4 Infant Floating Cot

14S3 RAFTS, LIFE

14S3-2 One Man

14S3-3 Four and Six Man

14S3-4 20 Man

14S3-5 25 Man

14S3-6 Seven Man

14S3-7 46 Man

14S3-8 12 Man

14S4 REPELLANTS-OINTMENTS

14S5 BREATHING UNITS

14S6 RESCUE SEATS

14S7 CONTAINERS (FOOD)

14S8 FLOTATION ASSEMBLIES (BAG)

14S9 SKYANCHORS (HOOKS)

14S10 LIGHTS

14S11 PUMPS

CHAPTER 18

CATEGORY 15 - AIRCRAFT AND MISSILE TEMPERATURE CONTROL, PRESSURIZING, AIR-CONDITIONING, HEATING, ICE ELIMINATING AND OXYGEN EQUIPMENT

18-1 GENERAL.

18-1.1 Category 15 contains five systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 15 use both three and four basic groups for data identification. Numbering patterns for both groups are discussed in paragraph 18-2.

18-1.2 TO data pertaining to more than one system is numbered in the category general series.

18-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

18-2 NUMBERING PATTERNS.

18-2.1 GROUP ONE. This group has three parts which identify the category, system, and equipment series within a system.

18-2.1.1 Part one is always the numeric 15 identifying Category 15.

18-2.1.2 Part two is an alpha character identifying one of five systems, i.e., A - air conditioning and pressurizing equipment; E - ice eliminating equipment; H - cabin heating equipment; M - missile temperature control equipment; and X - aircraft oxygen systems and equipment.

18-2.1.3 Part three contains one or more numeric characters identifying an equipment series within the system. The TO numbering series are outlined in paragraph 18-4.

18-2.2 GROUP TWO. TO numbering patterns in Category 15 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

18-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to a specific component.

18-2.2.2 If the TO number contains four basic groups, the equipment series identified in part

three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

18-2.3 GROUP THREE.

18-2.3.1 If the TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 15:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

18-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, or supplements. The following alpha characters are authorized for use in Category 15:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

18-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to a specific component.

18-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 18-2.3.1, above.

18-3 EXAMPLES OF CATEGORY 15 NUMBERING PATTERNS.

18-3.1 Overhaul instructions for an aircraft cabin air pressure regulator, PN 102166-1:

15A1-4-13-3

15	Category 15
A	Air-Conditioning and Pressurizing Equipment
1	Regulator Series
4	Air Pressure Regulator Subseries
13	Represents PN 102166-1
3	Number Reserved for Overhaul Instructions

18-3.2 An illustrated parts breakdown for a temperature control panel, PN A14A9718:

15E3-2-17-4

15	Category 15
E	Ice Eliminating Equipment
3	Control Series
2	Electric Control Subseries
17	Represents PN A14A9718
4	Number Reserved for Illustrated Parts Breakdown

18-3.3 Overhaul instructions with parts breakdown for an oxygen breathing mask assembly, PN 249-350:

15X5-4-5-3

15	Category 15
X	Aircraft Oxygen Systems and Equipment
5	Oxygen Mask Series
4	Pressure Demand Subseries
5	Represents PN 249-350
3	Number Reserved for Overhaul Instructions

18-4 CATEGORY 15 NUMBERING SERIES.

15	AIRCRAFT AND MISSILE TEMPERATURE CONTROL, PRESSURIZING, AIR-CONDITIONING, HEATING, ICE ELIMINATING, AND OXYGEN EQUIPMENT
15A	AIR CONDITIONING AND PRESSURIZING EQUIPMENT
15A-2	Systems
15A1	REGULATORS
15A1-2	Cabin Pressure

15A1-3	Cabin Temperature
15A1-4	Air Pressure
15A2	VALVES
15A2-2	Shutoff
15A2-3	Control
15A2-4	Safety
15A2-5	Selector
15A2-6	Mixing
15A2-7	Pressure Regulator
15A2-8	Check
15A2-9	Relief
15A2-10	Spill
15A2-11	Dump
15A2-12	Filter
15A2-13	By-Pass
15A2-14	Shuttle
15A2-15	Slide
15A2-16	Modulating
15A2-17	Flood
15A2-18	Drain
15A3	REFRIGERATION AND PRESSURIZATION UNITS
15A3-2	Turbine
15A3-3	Refrigeration Package
15A3-4	Fan, Blower
15A4	INTERCOOLERS (HEAT EXCHANGERS)
15A5	TEMPERATURE SENSING DEVICES
15A5-2	Control
15A5-3	Anticipator
15A5-4	Thermostat
15A5-5	Pick-Up Assembly
15A5-6	Sensor
15A5-7	Transmitter
15A6	FILTERS
15A6-2	High Temperature
15A7	SEPARATORS
15A7-2	Air Moisture
15A8	CONTROLS
15A8-2	Limit
15A8-3	Air
15A8-4	Pressure
15A8-5	Temperature
15A8-6	Changer
15A8-7	Timer
15A8-8	Selector
15A8-9	Dive Rate
15A8-10	Turbine
15A8-11	Panels
15A9	PUMPS
15A9-2	Air Turbine
15A9-3	Centrifugal
15A10	LINKAGE ASSEMBLIES

15A10-2	Air-Conditioning Package Unit	15H1	HEATERS
15A11	SUPERCHARGERS	15H1-2	Combustion
15A11-2	Cabin	15H1-3	Electric
15A12	DETECTORS	15H2	PUMPS
15A12-2	Air Flow	15H2-2	Vane
15A12-3	Ice	15H2-3	Cam
15A13	EJECTORS	15H2-4	Air Driven
15A14	DEHYDRATORS	15H3	BLOWERS
15A15	VENTURI TUBES	15H3-2	Fan
15A16	COMPRESSORS	15H4	IGNITION UNITS
15A17	ABSORBERS	15H4-2	Vibrator
15A18	DEHUMIDIFIERS	15H5	VALVES
15A19	TIRE INFLATION UNITS	15H5-2	Control
15A20	INDICATORS	15H5-3	Butterfly
15A21	AIR OUTLETS	15H5-4	Check
15A22	TRANSDUCERS	15H6	THERMOSTATS
15E	ICE ELIMINATING EQUIPMENT	15H6-2	Control
15E1	PUMPS	15H6-3	Anticipator
15E1-2	Circulating	15H6-4	Fuel
15E1-3	Metering	15H6-5	Air
15E2	VALVES	15H7	IMPELLERS
15E2-2	Shutoff	15M	MISSILE TEMPERATURE CONTROL EQUIPMENT
15E2-3	Selector	15M1	COOLING SYSTEMS
15E2-4	Regulating	15M2	VALVES
15E2-5	Control	15M2-2	Check
15E2-6	Relief	15M2-3	Control
15E2-7	Drain	15M3	HEAT EXCHANGERS
15E2-8	By-Pass	15M4	FANS AND BLOWERS
15E3	CONTROLS	15M5	CONTROLS
15E3-2	Electric	15X	AIRCRAFT OXYGEN SYSTEMS AND EQUIPMENT
15E3-3	Manual	15X1	SUPPLY CYLINDERS
15E3-4	Air	15X1-2	Low Pressure
15E4	SEPARATORS	15X1-3	High Pressure
15E4-2	Oil	15X1-4	Emergency Bailout
15E4-3	Water	15X1-5	Cylinder, Valve Assembly
15E5	FILTERS	15X2	CONVERTERS, LIQUID-OXYGEN
15E5-2	Fluid	15X2-2	5-Liter Capacity
15E5-3	Hot Air	15X2-3	25-Liter Capacity
15E6	RESERVOIRS (TANKS)	15X2-4	8-Liter Capacity
15E6-2	Fluid	15X2-5	20-Liter Capacity
15E7	FANS AND BLOWERS	15X2-6	10-Liter Capacity
15E7-2	Nose Radome	15X2-7	75-Liter Capacity
15E7-3	Cockpit Defogging	15X2-8	15-Liter Capacity
15E8	JOINT ASSEMBLIES	15X3	GAUGES, OXYGEN
15E9	EJECTORS	15X3-2	Gaseous
15H	CABIN HEATING EQUIPMENT	15X3-2-2	Low Pressure
		15X3-2-3	High Pressure

15X3-3	Liquid	15X8-9	Check
15X4	INDICATORS	15X8-10	Drain
15X4-2	Gaseous Oxygen	15X8-11	Shutoff
15X4-3	Liquid Oxygen	15X8-12	Coupling
15X4-4	Oxygen Deficiency	15X9	TRANSDUCERS
15X4-5	Pressure	15X10	CONTROL PANELS
15X5	MASKS, OXYGEN	15X11	SURVIVAL KITS
15X5-2	Continuous Flow	15X12	SEAT PACKS
15X5-3	Demand	15X13	DISCONNECT ASSEMBLIES
15X5-4	Pressure Demand	15X14	TRANSMITTERS
15X5-5	Smoke	15X15	MANIFOLDS
15X6	REGULATORS, OXYGEN FLOW	15X16	SWITCHES
15X6-2	Continuous Flow	15X17	HEAT EXCHANGERS
15X6-3	Demand	15X18	HOSE ASSEMBLIES
15X6-4	Manual Pressure Demand	15X19	GENERATORS
15X6-5	Automatic Pressure Demand	15X20	METERS
15X7	AIRBORNE TEST EQUIPMENT (Do not use)	15X21	VENTILATORS
15X8	VALVES	15X22	SEPARATORS
15X8-2	Low Pressure	15X23	CONTROLLERS
15X8-3	High Pressure		
15X8-4	Pressure Reducing Release		
15X8-5	Filler		
15X8-6	Liquid, Buildup, Vent		
15X8-7	Regulating		
15X8-8	Filter		

CHAPTER 19

CATEGORY 16 - AIRBORNE MECHANICAL EQUIPMENT

19-1 GENERAL.

19-1.1 Category 16 contains seven mechanical systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 16 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 19-2.

19-1.2 TO data pertaining to more than one system is numbered in the category general series.

19-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

19-2 NUMBERING PATTERNS.

19-2.1 **GROUP ONE.** This group has three parts identifying the category, system, and the equipment series within the system.

19-2.1.1 Part one is always the numeric 16 identifying Category 16.

19-2.1.2 Part two is an alpha character identifying the mechanical systems, i.e., A - actuators; C - control units; G - gear box, drive and screwjack assemblies; K - release mechanisms; L - lock and latching mechanisms; R - regulating mechanisms; and W - structural components. Associated equipment for these systems are identified by adding the alpha A immediately following the mechanical system identifier, e.g., GA.

19-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 19-4.

19-2.2 **GROUP TWO.** TO numbering patterns in Category 16 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

19-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

19-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more

numeric characters and the model, type or PN is identified in group three.

19-2.3 **GROUP THREE.**

19-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 16:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 7 Installation Instructions

19-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 16:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

19-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

19-2.4 **GROUP FOUR.** If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 19-2.3.1, above.

19-3 EXAMPLES OF CATEGORY 16 NUMBERING PATTERNS.

19-3.1 A maintenance manual for a control stick grip, PN 28000-7:

16C1-27-12-12	
16	Category 16
	Mechanical Control
	Mechanisms
1	Control Unit Series
27	Control Stick Subseries
12	Represents PN 28000-7
12	Number Reserved for
	Maintenance Instructions

19-3.2 Overhaul instructions with illustrated parts breakdown for ball nut and screw assembly, PN B-1142:

16G3-2-32-3

16	Category 16
G	Mechanical Gear Box, Drive and Screwjack Assemblies
3	Screwjack Mechanism Series
2	Screwjack Assembly Subseries
32	Represents PN B-1142
3	Number Reserved for Overhaul Instructions

19-3.3 Overhaul instructions for missile pylon package, PN 223-68327:

16W6-18-3

16	Category 16
W	Structural Components
6	Pylon Assembly Series
18	Represents PN 223-68327
3	Number Reserved for Overhaul Instructions

19-4 CATEGORY 16 NUMBERING SERIES.

16	AIRBORNE MECHANICAL EQUIPMENT
16A	ACTUATING MECHANISMS
16A1	ACTUATORS
16A1-2	Bomb Bay Door
16A1-3	Dive Brake
16A1-4	Hoist Traversing
16A1-5	Linear
16A1-6	Main Landing Gear
16A1-7	Nacelle Cooling Door
16A1-8	Nose Gear
16A1-9	Rocket Door
16A1-10	Rudder Control
16A1-11	Tab Control
16A1-12	Tail Skid
16A1-13	Wing Flap
16A1-14	Auxiliary
16A1-15	Canopy Jettison
16A1-16	Dive Flap
16A1-17	Main Landing Gear Door
16A1-18	Camera Door
16A1-19	Rear Landing Gear Door
16A1-20	Windshield
16A1-21	Air Exit Door
16A1-22	Throttle Control
16A1-23	Drag Chute Door
16A1-24	Nose Landing Gear Door
16C	CONTROL MECHANISMS
16C1	CONTROL UNITS
16C1-2	Tab, Aileron
16C1-3	Flap

16C1-4	Brake
16C1-5	Rudder
16C1-6	Door
16C1-7	Elevator
16C1-8	Spoiler
16C1-9	Wheel
16C1-10	Stabilizer
16C1-11	Steering
16C1-12	Landing Gear
16C1-13	Antenna
16C1-14	Valve
16C1-15	Parachute Release
16C1-16	Special Stores
16C1-17	Bombing System
16C1-18	Fuel Boom
16C1-19	Flight Simulator
16C1-20	Canopy Latch
16C1-21	Head
16C1-22	Instrument Box
16C1-23	Emergency Hydraulic Power
16C1-24	Gimbal Assembly
16C1-25	Sector Box
16C1-26	Mixer
16C1-27	Control Stick
16C1-28	Positioning Lever
16C1-29	Pod Release
16C1-30	Surface, Wing-Fold, Wing-Tip, Fold-up, Trailing Edge
16C1-31	Propeller
16C1-32	Air Inlet
16C1-33	Stairs, Ladder
16G	GEAR BOX, DRIVE, AND SCREWJACK ASSEMBLIES
16G1	GEAR BOXES
16G2	DRIVE MECHANISMS
16G2-2	Angle
16G2-3	Torque
16G2-4	Bevel
16G2-5	Hexagon
16G2-6	Worm
16G2-7	Power Plant
16G3	SCREWJACK MECHANISMS
16G3-2	Screwjack Assembly
16G4	UNIVERSAL JOINTS
16G5	SHAFTS
16G5-2	Alternator
16G5-3	Disconnect Assembly
16G5-4	Torque
16G5-5	Power Transmission
16G5-6	Nozzle
16GA	ASSOCIATED EQUIPMENT
16GA3	SCREWJACK MECHANISMS
16GA3-2	Limiter
16GA3-3	Plug (Do not use)
16GA4	GEAR BOXES (Do not use)

16K	RELEASE MECHANISMS	16W11	PLATE ASSEMBLIES
16K1	RELEASE ASSEMBLIES	16W12	SUPPORT ASSEMBLIES
16K1-2	Jettison	16W13	SNUBBERS
16K1-3	Landing Gear	16W14	DUCT ASSEMBLIES
16K1-4	Parachute	16W15	RAIL ASSEMBLIES
16K1-5	Escape Hatch	16W16	CASE AND CARTRIDGE ASSEMBLIES
16K1-6	Capsule Disconnect	16W17	DASHPOT ASSEMBLIES
16K1-7	Pod	16W18	COUNTERPOISE ASSEMBLIES
16K1-8	Bomb Bay Rack	16W19	ENGINE MOUNT ASSEMBLIES
16K1-9	Disconnect	16W20	FLARE BOXES
16K1-10	Carriage Shackle	16W21	MISSILE SPACERS
16L	LOCKING AND LATCHING MECHANISMS	16W22	PIN ASSEMBLIES
16L1	LOCKING AND LATCHING	16W23	SEAL ASSEMBLIES
16L1-2	Drag Parachute Compartment	16W24	REVERSER ASSEMBLIES
16L1-3	Gear	16W25	BEARINGS
16L1-4	Door	16W26	RACK AND MOUNT ASSEMBLIES
16L1-5	Pilot's Canopy	16W27	CONSOLES
16L1-6	Strut	16W28	EXHAUST VALVES
16L1-7	Rudder, Stabilizer, Elevator	16W29	TUBES
16L1-8	Pod	16W30	BATTERY BOX ASSEMBLIES
16L1-9	Arresting Hook	16W31	NACELLE VENTILATION EJECTORS
16L1-10	Aerial Delivery	16W32	LEADING EDGE ASSEMBLIES (WING)
16L1-11	Wing Flap	16W33	ARRESTING GEAR ASSEMBLIES
16R	REGULATING MECHANISMS	16W34	TANK ASSEMBLIES
16R1	REGULATORS	16W35	ADAPTER ASSEMBLIES
16R1-2	Cable Tension	16W36	LINERS
16R1-3	Quadrant	16W37	COVERS
16R1-4	Canopy Seal	16W38	CONTROL COLUMN ASSEMBLIES
16R1-5	Control Box	16W39	CONNECTING LINKS
16R1-6	Linkage Assembly	16W40	NOSE ASSEMBLIES
16W	STRUCTURAL COMPONENTS (AIRFRAME)	16W41	PODS
16W1	WINDOW ASSEMBLIES	16W42	GLARESHIELD ASSEMBLIES
16W1-2	Window		
16W2	CANOPY ASSEMBLIES		
16W3	DOOR ASSEMBLIES		
16W4	CAPSULE ASSEMBLIES		
16W5	RADOME ASSEMBLIES		
16W6	PYLON ASSEMBLIES		
16W7	PANEL ASSEMBLIES		
16W8	CARRIAGE AND SHACKLE ASSEMBLIES		
16W9	BODY ASSEMBLIES		
16W10	COUNTERBALANCE ASSEMBLIES		

CHAPTER 20

CATEGORY 21 - GUIDED MISSILES

20-1 GENERAL.

20-1.1 Technical data numbered in the missile category includes operations manuals, organization (on site) maintenance instructions, inspection requirements, overhaul instructions and specified procedures relating to missiles. TO numbers incorporate the missile type or mission, model and production series, which groups types of missile data accordingly.

20-1.2 Technical information pertaining to more than one type of missile is numbered in the category general series. Since the data pertains to more than one type of missile, TO numbers assigned in the category general series do not reflect the missile type, model or production series. A manual entitled, "Plating Procedures for the AIM-4 and the LGM-30" would be numbered as follows:

21M-1-107
 21 Category 21
 M Missile
 1 Category General Series
 107 Serialized Manual Number

20-1.3 TOs pertaining to more than one model of a specific type of missile are numbered in the general series of that missile type. An operational manual relating to the AIM-4 and the AIM-26 would be numbered as follows:

21M-AIM-101
 21 Category 21
 M Missile
 AIM Air Launched, Intercept Aerial,
 Missile
 101 Serialized Manual Number

20-1.4 Technical information pertaining to more than one production series of a missile model is numbered in the first production series. A field checkout instruction for the AIM-4A, AIM-4D and AIM-4G would be numbered in the "A" production series.

20-1.5 TOs for earlier guided missiles are numbered as described in paragraphs 20-2 and 20-3. TOs for the M-X and later guided missile systems are numbered as described in paragraphs 20-4 and 20-5.

20-2 NUMBERING PATTERNS.

20-2.1 GROUP ONE. In Category 21, the first group has only two parts, identifying the category, and a designator indicating missiles.

20-2.1.1 Part one is always the numeric 21 identifying Category 21.

20-2.1.2 Part two is always the alpha M identifying missiles.

20-2.2 GROUP TWO. This group can have either two or three parts. If two parts are used, the missile type and model only are identified. This normally means the TO contains general information pertaining to all production series of a specific missile type and model. In most cases, three parts are used in group three, indicating the missile type, model and production series.

20-2.2.1 Part one is composed of three alpha characters. The first alpha character identifies the missile launch environment; the second indicates the basic mission of the missile; and the third describes the missile vehicle type. The following listing outlines these alpha designators as established by AFR 82-1:

LAUNCH ENVIRONMENT

A - Air
 B - Multiple
 C - Coffin
 F - Individual
 G - Runway
 H - Silo Stored
 L - Silo Launched
 M - Mobile
 P - Soft Pad
 R - Ship
 U - Underwater

BASIC MISSION

D - Decoy
 E - Special Electronic Installation
 G - Surface Attack
 I - Intercept Aerial
 Q - Drone
 T - Training
 U - Underwater Attack
 W - Weather

VEHICLE TYPE

M - Guided Missile/Drone

20-2.2.2 Part two contains one or more numeric characters identifying the missile model number.

20-2.2.3 Part three is an alpha character indicating the missile production series. The first production series of a particular missile is designated with the alpha A, the second with the alpha B and continuing through the alphabet as required.

20-2.2.4 It is possible that a fourth part may be required for group two in order to identify a missile production configuration. If this becomes a requirement, the production configuration identifier (PCI) will be an alpha character immediately following the production series identifier. The alpha A is reserved to indicate USAF missile configurations and the remainder of the alphabet will be used for those configurations produced for foreign countries. Although the alpha A is reserved to identify USAF missile configurations, no specific alpha character will be associated with or reserved for missile configurations for a particular foreign country.

20-2.3 GROUP THREE. In Category 21, the third group primarily identifies the type of inspection, instruction, or procedure. This can be accomplished by either one or two parts.

20-2.3.1 Part one consists of one or more numeric characters reserved to indicate a specific type of TO. The following is a list of reserved numbers authorized for use in Category 21:

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Organizational Maintenance Manuals
- 3 Structural Repair and Overhaul Manuals
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 10 Engine Buildup Manuals
- 12 Special Maintenance Manuals
- 16 Warhead Loading
- 17 Storage of Missiles
- 18 Field Maintenance and Materials Manuals
- 21 Missile Inventory Record Master Guides
- 22 Control Manuals

- 23 Corrosion Control Manuals
- 26 Non-Destructive Inspection Manuals
- 27 Calibration and Measurement Manuals
- 33 Contractor Maintenance Data

20-2.3.2 Part two. In some instances some of the reserved numbers listed in part one, above, are followed by one or more alpha characters indicating a series of checklists, workcards, supplements, and other media. The following lists the alpha characters authorized for use in Category 21:

- CL - Checklist
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards
- WS - Worksheets

20-2.4 GROUP FOUR. This group consists of one or more numeric characters identifying sections of a sectionalized manual or indicating the series number of specific TO data in a series of inspections, supplements, or functions.

20-2.5 GROUP FIVE. When required, this group contains one or more numeric characters indicating a further sectionalization or serialization of a TO.

20-3 EXAMPLES OF CATEGORY 21 NUMBERING PATTERNS.

20-3.1 A work unit code manual for the AIM-9E missile:

21M-AIM9E-06

21	Category 21
M	Missiles
AIM	Air Intercept Missile
9	Missile Model Number
E	Production Series
06	Number Reserved for Work Unit Code Manual

20-3.2 Inspection requirements for the AGM-12C missile:

21M-AGM12C-6

21	Category 21
M	Missiles
AGM	Air-to-Ground Missile
12	Missile Model Number
C	Production Series
6	Number Reserved for Inspection Requirements

20-3.3 Structural repair manual for the LGM-30A missile:

21M-LGM30A-3

21	Category 21
M	Missiles
LGM	Launched Ground Missiles
30	Missile Model Number
A	Product Series
3	Number Reserved for Structural Repair Manuals

20-4 SHORTENED NUMBERING FOR MISSILE TECHNICAL ORDER MANUALS.

20-4.1 To eliminate redundancy, TO numbers for future missiles will be shortened by eliminating the M in category designator 21M and by eliminating the M in model designators such as LGM. These codes are redundant, since only missile TOs appear in Category 21.

20-4.2 Using shortened TO numbers will be effective with the LGM-118A and future missile designs. Use of the former numbering practice will continue for earlier designated missiles.

Existing TOs in Category 21 will not be renumbered for the sole purpose of shortening the TO numbers.

20-4.3 The following is an example of this method applied to an organizational maintenance instruction for launch facility and launch control facility environmental control system for the LGM-118A missile:

21-LG118A-2-7-4

21	Identifies Missile Category
L	Silo Launch Environment
G	Surface Attack Mission
118	Design Number
A	Design Series
2	Maintenance Manual
7	Launch Facility and Launch Control Facility Environmental Control System
4	Designates Specific Installation

CHAPTER 21

CATEGORY 22 - AEROSPACE VEHICLES

21-1 GENERAL.

21-1.1 TO data numbered in this category identifies operational, organizational maintenance, inspection and procedures related to aerospace vehicles and systems. Aerospace vehicles are either manned or unmanned flight vehicles operating in the atmosphere or space environment. TO numbers incorporate the aerospace vehicle type and model or the aerospace system which identifies family groups according to mission or function.

21-1.2 Information pertaining to more than one aerospace vehicle is numbered in the category general series. Numbers assigned in this section do not contain the aerospace vehicle type and model in the TO number.

21-1.3 TOs pertaining to only one type of aerospace vehicle but containing information relative to more than one vehicle model within that type, will be numbered in the general series of the aerospace vehicle type.

21-1.4 TO data pertaining to more than one production series of an aerospace vehicle model will be numbered in the first series, i.e., operational data applicable to the MER-6A, MER-6B and MER-6C would be numbered as 22R-MER6A-1.

21-2 NUMBERING PATTERNS.

21-2.1 GROUP ONE. With the exception of the Category 22 general series TO numbers, the first group of the TO numbering pattern for aerospace TOs consists of a numeric 22, denoting Category 22, and an alpha character identifying one of five aerospace systems, i.e., R - rockets; G - boosters; J - spacecraft; P - probes; and S - satellites.

21-2.2 GROUP TWO. The second group of the TO number contains the aerospace vehicle type, model and production series; or an L system which is used in the aerospace program.

21-2.3 GROUP THREE.

21-2.3.1 In this category the third group of the numbering pattern identifies the type of TOs by using a number reserved for each type. The following is a list of reserved numbers authorized for Category 22:

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Maintenance Manuals
- 3 Structural Repair Instructions
- 4 Illustrated Parts Breakdown
- 5 Weight and Balance Manuals
- 6 Inspection Requirements
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 17 Storage of Aerospace Vehicles
- 18 Field Maintenance of Material

21-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 22:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards
- WS - Worksheets

21-3 EXAMPLES OF CATEGORY 22 NUMBERING PATTERNS.

21-3.1 An operational manual for the MER-6A aerospace rocket:

22R-MER6A-1	
22	Category 22
R	Rockets
MER	Rocket Type
6	Rocket Model Number
A	Production Series A
1	Number Reserved for Operating Instructions

21-3.2 An illustrated parts breakdown for the 494L system used in the aerospace program:

22R-494L-4	
22	Category 22
R	Rockets
494L	L System identification
4	Number Reserved for Illustrated Parts Breakdown

CHAPTER 22

CATEGORY 31 - GROUND ELECTRONIC EQUIPMENT

22-1 GENERAL.

22-1.1 Much of the equipment covered by TOs in this category is identified under the Joint Electronics Type Designation System (JETDS). The JETDS, which was formerly known as the AN Nomenclature System, is described in MIL-STD-196D.

22-1.2 Category 31 contains seven primary ground electronic equipment systems. These systems are divided into equipment series; some are further divided into equipment subseries within the equipment series. TO numbers in Category 31 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 22-2.

22-1.3 TO data pertaining to more than one system is numbered in the category general series.

22-1.4 Information relating to more than one equipment series is numbered in the system general series.

22-1.5 General TOs for JETDS equipment are described in paragraph 1-23.

22-2 NUMBERING PATTERNS.

22-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

22-2.1.1 Part one is always the numeric 31 identifying Category 31.

22-2.1.2 Part two is an alpha character identifying the electronic equipment system, i.e., M - meteorological equipment; P - radar equipment; R - radio equipment; S - special electronic equipment; W - wire fixed electronic equipment; X - missile ground operational equipment; and Z - systems and site equipment. Missile ground operational equipment is the only system in Category 31 that has associated equipment. Its associated equipment is identified by XA.

NOTE

Although numerous TOs are currently numbered in the 31X and 31XA series, these series will not be used for numbering new TOs. Future TOs for missile ground operational equipment will be numbered in appropriate functional equipment systems of Category 31.

22-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 22-4.

22-2.2 GROUP TWO. The several numbering patterns currently used in Category 31 are most conspicuous in the group two numbering configurations. Numbering patterns are as follows:

22-2.2.1 This paragraph covers numbering patterns for 31M, 31P, 31R, 31S and 31W systems. The numbering patterns use both three and four basic groups; therefore, the identifiers in group two are not constant.

22-2.2.1.1 If the equipment types are JETDS nomenclatured, three basic groups are used in the TO number. The numeric 2 followed immediately by an alphameric JETDS nomenclature comprises group two.

22-2.2.1.2 If the equipment types are Signal Corps nomenclatured, three basic groups are used in the TO number. The numeric 3 followed immediately by an alphameric Signal Corps nomenclature comprises group two.

22-2.2.1.3 If the equipment types are Air Force nomenclatured, three basic groups are used in the TO number. The numeric 5 followed immediately by an alphameric AF nomenclature comprises group two.

22-2.2.1.4 If the equipment types are commercially nomenclatured (not JETDS, Signal Corps, or AF), four basic groups are used in the TO number. The numeric 4 is the only character in group two.

22-2.2.2 This paragraph covers numbering patterns for the 31X system which uses both three and four basic groups.

22-2.2.2.1 The numbering pattern for basic equipment TOs in the 31X System uses four basic groups. In this case one or more numeric characters in group two identify the equipment subseries.

22-2.2.2.2 The numbering pattern for associated equipment TOs (indicator 31XA) uses only three basic groups. In this case one or more numeric characters in group two represent the model, type or PN assigned to specific equipment.

22-2.2.3 The numbering pattern for 31Z series TOs uses three basic groups. Group two, with one or more numeric characters, identifies AFCS (formerly GEEIA) Engineering-Installation Standards or a specific system, site, facility or special project. The type of TO is identified in group three as described in paragraph 22-2.3.1, below.

22-2.3 GROUP THREE.

22-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 31:

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Service or Maintenance Instructions
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 5 Command Manuals
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Alignment Instructions

22-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 31:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

22-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific equipment or components. When this occurs the specific type of TO is then identified in group four.

22-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 22-2.3.1.

22-3 EXAMPLES OF CATEGORY 31 NUMBERING PATTERNS.

22-3.1 Operating and maintenance instructions for timing and telephone set, type ML-110:

31M1-3ML110-1

31	Category 31
M	Meteorological Equipment
1	Auxiliary Meteorological Equipment Series
3	Identifies Signal Corps Nomenclatured Items
ML110	Identifies Specific Signal Corps Nomenclatured Item
1	Number Reserved for Operating Instructions

22-3.2 Operating instructions with service instructions and illustrated parts breakdown for radio transmitter model TCS-4B:

31R2-4-153-1

31	Category 31
R	Radio Equipment
2	Communication Series
4	Commercial Nomenclatured Items
153	Represents Model TCS-4B
1	Number Reserved for Operating Instructions

22-3.3 Operating and service instructions for a combat reporting center, type AN/TSQ-91:

31S1-2TSQ91-1

31	Category 31
S	Special Electronic Equipment
1	Auxiliary Equipment Series
2	Identifies JETDS Nomenclatured Items
TSQ91	Identifies Specific JETDS Nomenclatured Item
1	Number Reserved for Operating Instructions

22-3.4 Illustrated parts breakdown for missile ground checkout equipment generator PN 55-11387:

31X2-9-16-4

31	Category 31
X	Missile Ground Operational Equipment
2	Checkout Equipment Series
9	Generator Subseries
16	Represents PN 55-11387
4	Number Reserved for Illustrated Parts Breakdown

22-3.5 Service instructions for mobile single side-band high frequency medium power facility, communication central, type AN/TSC-40, facility 691:

31Z3-691-2

31	Category 31
Z	Ground Defense Systems
3	Facility Publications Series
691	Identifies Facility 691
2	Number Reserved for Service Instructions

22-4 CATEGORY 31 NUMBERING SERIES.

31	GROUND-ELECTRONIC EQUIPMENT
31M	METEOROLOGICAL-ELECTRONIC EQUIPMENT
31M-10	AFCS Engineering - Installation (formerly GEEIA) Standards
31M1	AUXILIARY
31M1-2	JETDS Nomenclature
31M1-3	Signal Corps Nomenclature
31M1-4	Commercial Nomenclature
31M1-5	AF Nomenclature
31M2	BAROMETRIC
31M2-2	JETDS Nomenclature
31M2-3	Signal Corps Nomenclature
31M3	STATIONS
31M3-2	JETDS Nomenclature
31M3-4	Commercial Nomenclature
31M3-5	AF Nomenclature
31M4	TEMPERATURE AND HUMIDITY
31M4-2	JETDS Nomenclature
31M4-3	Signal Corps Nomenclature
31M4-4	Commercial Nomenclature
31M5	WIND DIRECTION AND VELOCITY
31M5-2	JETDS Nomenclature
31M6	CLOUD HEIGHT, DEPTH, AND DIRECTION
31M6-2	JETDS Nomenclature
31M7	TELEMETERING
31M7-2	JETDS Nomenclature
31M7-4	Commercial Nomenclature
31P	RADAR-ELECTRONIC EQUIPMENT
31P1	AUXILIARY
31P1-2	JETDS Nomenclature
31P1-4	Commercial Nomenclature
31P2	CONTROLS
31P2-2	JETDS Nomenclature
31P2-3	Signal Corps Nomenclature
31P2-4	Commercial Nomenclature

31P3	HEIGHT FINDING
31P3-2	JETDS Nomenclature
31P3-4	Commercial Nomenclature
31P4	IDENTIFICATION, FRIEND-OR-FOE
31P4-2	JETDS Nomenclature
31P5	NAVIGATION
31P5-2	JETDS Nomenclature
31P5-4	Commercial Nomenclature
31P6	SEARCH
31P6-2	JETDS Nomenclature
31P6-3	Signal Corps Nomenclature
31P6-4	Commercial Nomenclature
31P7	SURVEILLANCE
31P7-2	JETDS Nomenclature
31P8	COUNTERMEASURES
31P8-2	JETDS Nomenclature
31P8-4	Commercial Nomenclature
31P9	OVER-THE-HORIZON
31P9-2	JETDS Nomenclature
31R	RADIO-ELECTRONIC EQUIPMENT
31R1	AUXILIARY
31R1-2	JETDS Nomenclature
31R1-3	Signal Corps Nomenclature
31R1-4	Commercial Nomenclature
31R2	COMMUNICATION
31R2-2	JETDS Nomenclature
31R2-3	Signal Corps Nomenclature
31R2-4	Commercial Nomenclature
31R2-5	AF Nomenclature
31R3	CONTROL
31R3-2	JETDS Nomenclature
31R3-3	Signal Corps Nomenclature
31R3-4	Commercial Nomenclature
31R4	NAVIGATION
31R4-2	JETDS Nomenclature
31R4-3	Signal Corps Nomenclature
31R4-4	Commercial Nomenclature
31R5	RELAY MICROWAVE
31R5-2	JETDS Nomenclature
31R5-4	Commercial Nomenclature
31R6	(Not used)
31S	SPECIAL-ELECTRONIC EQUIPMENT
31S1	AUXILIARY
31S1-2	JETDS Nomenclature
31S1-4	Commercial Nomenclature
31S2	FACSIMILE
31S2-2	JETDS Nomenclature
31S2-4	Commercial Nomenclature

31S3	RECORDING	31W4-4	Commercial Nomenclature
31S3-2	JETDS Nomenclature	31X	MISSILE GROUND OPERATIONAL EQUIPMENT
31S3-3	Signal Corps Nomenclature		
31S3-4	Commercial Nomenclature	31X1	COMMUNICATIONS
31S4	TELEVISION	31X1-2	General
31S4-2	JETDS Nomenclature	31X1-3	Public Address Set
31S4-4	Commercial Nomenclature	31X1-4	Connecting Station
31S4-5	AF Nomenclature	31X1-8	Telephone Set
31S5	COMPUTER SYSTEMS	31X1-10	Amplifier
31S5-2	JETDS Nomenclature	31X1-11	Power Unit, Chassis, Relay
31S5-4	Commercial Nomenclature	31X1-12	Headset
31S6	COUNTERMEASURES	31X2	CHECKOUT
31S6-2	JETDS Nomenclature	31X2-2	Checkout Assembly
31S6-4	Commercial Nomenclature	31X2-3	Console
31S7	TELEMETRY	31X2-4	Panel
31S7-2	JETDS Nomenclature	31X2-9	Generator
31S7-4	Commercial Nomenclature	31X2-10	Control Unit
31S8	CONTROL	31X2-11	Power Supply
31S8-2	JETDS Nomenclature	31X2-12	Counter
31S8-4	Commercial Nomenclature	31X2-15	Selector
31S9	SPECIAL DETECTING	31X2-19	Receiver
31S9-2	JETDS Nomenclature	31X2-20	Monitor
31S9-4	Commercial Nomenclature	31X2-24	Simulator
31S10	SIMULATED COHERENT RADIATION DEVICES	31X2-26	Regulator
31S10-2	JETDS Nomenclature	31X2-28	Meter, Measuring Equipment
31S10-4	Commercial Nomenclature	31X2-29	Rectifier
31S11	FIBER OPTIC	31X2-30	Relay
31S11-2	JETDS Nomenclature	31X2-32	Digital Unit
31S11-4	Commercial Nomenclature	31X2-35	Switching Unit
31S12	NONSTANDARD CRYPTOGRAPHIC EQUIPMENT	31X2-36	Cable Unit
31W	GROUND WIRE, FIXED-ELECTRONIC EQUIPMENT	31X2-38	Amplifier Assembly
31W1	AUXILIARY	31X2-41	Signal Source Assembly
31W1-2	JETDS Nomenclature	31X2-45	Coupler Group
31W1-3	Signal Corps Nomenclature	31X2-47	Indicator
31W1-4	Commercial Nomenclature	31X2-50	Circuit Assembly
31W2	INSIDE PLANT	31X2-55	Exerciser
31W2-2	JETDS Nomenclature	31X2-56	Adapter Unit
31W2-3	Signal Corps Nomenclature	31X2-57	Recorder, Memory Erase Unit
31W2-4	Commercial Nomenclature	31X2-58	Reproducer
31W2-10	AFCS Engineering - Installation Standards	31X2-61	Modulator, Demodulator
31W3	OUTSIDE PLANT	31X2-62	Insertor
31W3-4	Commercial Nomenclature	31X2-63	Alignment Equipment
31W3-10	AFCS Engineering - Installation Standards	31X2-66	Zeroing Unit
31W4	TELETYPE	31X2-67	Pulse Assembly
31W4-2	JETDS Nomenclature	31X2-68	Reset Assembly
		31X2-69	Drawer
		31X2-71	Filter, Network
		31X2-73	Instrument Assembly
		31X2-74	Computer
		31X2-77	Semiconductor Device Set
		31X3	LAUNCH CONTROL AND COUNTDOWN
		31X3-2	Launch Control - Countdown
		31X3-3	Console, Launch Control, and Countdown
		31X3-6	Countdown Relay

31X3-8	Panel	31X8	CODE PROCESSING
31X3-10	Control	31X8-2	Consoles
31X3-11	Programmer	31XA	ASSOCIATED EQUIPMENT AND COMPONENTS FOR MISSILE GROUND OPERATIONAL EQUIPMENT
31X3-12	Monitor		
31X3-13	Power Supply		
31X3-15	Recorder Group, Memory Erase Unit		
31X3-16	Switching Unit		
31X3-18	Synchronizer	31XA2	INTERCONNECTING KITS
31X3-23	Multiplexer	31XA3	COUPLERS
31X3-27	Decoder	31XA4	VALVES
31X3-28	Printed Circuit Assembly	31XA5	SWITCHES
31X3-31	Alarm	31XA6	MOTORS
31X4	POWER DISTRIBUTION EQUIPMENT	31XA7	JUNCTION BOXES
31X4-2	Power Distribution Unit	31XA9	PUMPS
31X4-3	Generation and Distribution Panel	31XA16	LOAD DUCTS
31X4-5	Control Unit	31Z	GROUND DEFENSE SYSTEMS
31X4-8	Electrical Cable	31Z-10	AFCS Engineering - Installation Standards, General
31X7	GROUND GUIDANCE EQUIPMENT	31Z1	SYSTEM TECHNICAL ORDERS
31X7-2	System	31Z2	SITE TECHNICAL ORDERS
31X7-3	Control Assembly	31Z3	FACILITY TECHNICAL ORDERS
31X7-5	Power Supply Assembly	31Z4	SPECIAL COMMUNICATIONS PROJECTS
31X7-8	Amplifier Assembly		
31X7-14	Converter		
31X7-16	Computer		
31X7-24	Storage Device		
31X7-45	Timing Device		
31X7-51	Altimeter		
31X7-52	Stabilizer		

CHAPTER 23

CATEGORY 32 - STANDARD AND SPECIAL TOOLS

23-1 GENERAL.

23-1.1 Category 32 contains two types of tool systems. These systems are divided into equipment series and both of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 32 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 23-2.

23-1.2 TO data pertaining to more than one system is numbered in the category general series.

23-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

23-2 NUMBERING PATTERNS.

23-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

23-2.1.1 Part one is always the numeric 32, identifying Category 32.

23-2.1.2 Part two is an alpha character identifying the system, i.e., A - special tools and B - standard tools.

23-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series is outlined in paragraph 23-4.

23-2.2 GROUP TWO. TO numbering patterns in Category 32 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

23-2.2.1 If the TO number uses only three basic groups, group two has one or more numeric characters representing the model, type or PN assigned to specific equipment.

23-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

23-2.3 GROUP THREE.

23-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 32:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 7 Installation Instructions

23-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 32:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

23-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

23-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 23-2.3.1, above.

23-3 EXAMPLES OF CATEGORY 32 NUMBERING PATTERNS.

23-3.1 Operating instructions with parts breakdown for a borescope, model 120011-3.

32A2-9-1	
32	Category 32
A	Special Tools
2	Boresight Series
9	Represents Model 120011-3
1	Number Reserved for Operating Instructions

23-3.2 Operating and service instructions for an actuator repair tool kit, PN 7592417P1:

32A20-3-46-1

32	Category 32
A	Special Tools
20	Kit Series
3	Tool Kit Subseries
46	Represents PN 7592417P1
1	Number Reserved for Operating Instructions

23-3.3 Operating instructions with illustrated parts breakdown for reversible impact wrench, model 7275:

32B14-4-18-1

32	Category 32
B	Standard Tools
14	Wrench Series
4	Pneumatic Wrenches Subseries
18	Represents Model 7275
1	Number Reserved for Operating Instructions

23-4 CATEGORY 32 NUMBERING SERIES.

32	STANDARD AND SPECIAL TOOLS
32A	SPECIAL TOOLS
32A1	BALANCERS
32A2	BORESIGHTS
32A3	SPLICERS
32A3-2	Cable
32A4	GUNS
32A4-2	Pressure
32A4-3	Spring Charging
32A4-4	Heat
32A5	WRENCHES
32A5-2	Torque
32A5-3	Plain
32A5-4	Extension
32A5-5	Special
32A5-6	Socket
32A5-7	Power Kit
32A6	FIXTURES
32A6-2	Heater Curing
32A6-3	Zeroing
32A6-4	Spreader
32A6-5	Initiator Simulator
32A6-6	Torque
32A6-7	Fairing Assembly
32A6-8	Adapter
32A6-9	Mold
32A6-10	Turnover

32A6-11	Rigging
32A6-12	Airseal Trimming
32A6-13	Cockpit Display
32A6-14	Power Control Linkage Assembly
32A6-15	Mounter, Demounter
32A6-16	Gluing
32A6-17	Drill
32A6-18	Clutch Run-In
32A6-19	Gauge
32A6-20	Locating, Attaching Points
32A6-21	Special Tool
32A6-22	Spoiler
32A6-23	Installer, Extractor
32A6-24	Shipping

32A7	SHARPENERS
32A7-2	Chain Saw

32A8	DIGGERS
32A8-2	Clay

32A9	TAMPERS
32A9-2	Backfill
32A9-3	Rams

32A10	BREAKERS
32A10-2	Paving

32A11	VIBRATORS
32A11-2	Concrete

32A12	LEVELING TOOLS
32A12-2	Telescopic
32A12-3	Line Level Indicator
32A12-4	Guidance System
32A12-5	Electronic

32A13	WELL DRILLERS
32A13-2	Gasoline Engine Driven

32A14	GRINDING DEVICES
32A14-2	Antenna

32A15	PROTRACTORS
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32A16	SWAGERS
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32A17	DETECTORS
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32A18	CALIBRATORS
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32A19	TEMPLATES AND GAUGES
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32A20	KITS
32A20-2	Adjusting
32A20-3	Tool, Tire Inflation
	Assembly Kit
32A20-4	Mount
32A20-5	Rigging
32A20-6	Installation

32A21	BORING TOOLS
32A21-2	Carburetor Jet
32A21-3	Auger
32A21-4	Structural Repair

32A22	TARGET ASSEMBLIES	32B4-3	Pneumatic
32A23	EXTRACTORS	32B5	RIVETERS
32A24	ROLLERS	32B5-2	Pneumatic
32A25	TEST TOOLS	32B5-3	Hydraulic
32A26	BRAZING TOOLS	32B6	HAMMERS
32A27	CLAMPS	32B6-2	Pneumatic
32A27-2	Guidance Set	32B6-3	Electric
32A27-3	Nose	32B7	IRONS
32A28	EJECTORS	32B7-2	Electric
32A28-2	Air	32B8	PLANES
32A29	CONTROL UNITS	32B8-2	Hand
32A29-2	Heat	32B8-3	Electric
32A30	GAUGES (See 32A19)	32B9	PULLERS
32A31	PULLERS (See 32A23 Also)	32B10	SANDERS
32A32	EXTRACTORS (Use 32A23)	32B10-2	Electric
32A33	CUTTERS	32B10-3	Pneumatic
32A34	SPREADERS	32B11	SCREWDRIVERS
32A35	PULSER	32B11-2	Pneumatic
32A36	ERASING DEVICES	32B12	SHAVERS
32A37	PROTRACTORS (Use 32A15)	32B12-2	Pneumatic
32A38	SERVICE TOOLS	32B13	SAWS
32A39	COUNTERS	32B13-2	Electric
32A40	FRONT LENGTH TOOL	32B13-3	Pneumatic
32A41	REELS	32B14	WRENCHES
32B	STANDARD TOOLS	32B14-2	Electric
32B1	CUTTERS	32B14-3	Hand
32B1-2	Cable	32B14-4	Pneumatic
32B2	DRILLS	32B14-5	Hydraulic
32B2-2	Electric	32B15	ETCHERS
32B2-3	Pneumatic	32B15-2	Electric
32B3	GAUGES	32B16	KITS
32B4	GRINDERS	32B16-2	Canvas Repair
32B4-2	Electric	32B17	DRILL ATTACHMENT
		32B17-2	Cutoff and Burring Tool
		32B18	REFACING TOOLS
		32B19	CRIMPING TOOLS
		32B20	WRAPPING TOOLS

CHAPTER 24

CATEGORY 33 - TEST EQUIPMENT

24-1 GENERAL.

24-1.1 This category contains testers, test equipment and test interface equipment. Test procedures, test control and programmed test TOs are numbered with related equipment identified in the various airborne and ground component categories.

24-1.2 Category 33 contains five test equipment systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 33 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 24-2.

24-1.3 TO data pertaining to more than one system is numbered in the category general series.

24-1.4 Information relating to more than one equipment series within a system is numbered in the system general series.

24-2 NUMBERING PATTERNS.

24-2.1 **GROUP ONE.** This group has three parts that identify the category, system and equipment series within a system.

24-2.1.1 Part one is always the numeric 33 identifying Category 33.

24-2.1.2 Part two is an alpha character identifying one of five aerospace systems, i.e., A - general purpose test equipment; B - inspection test equipment; C - laboratory test equipment; D - special purpose test equipment; and K - calibration procedures. Only 33A and 33D systems have associated equipment TOs. Associated equipment for these systems is identified by adding the alpha A immediately following the system identifier, i.e., AA or DA.

24-2.1.3 Part three contains one or more numeric characters that identify an equipment series within a system. The TO numbering series is outlined in paragraph 24-4.

24-2.2 **GROUP TWO.** TO numbering patterns in Category 33 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

24-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

24-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

24-2.3 **GROUP THREE.**

24-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 33:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance Manuals
- 4 Illustrated Parts Breakdown
- 5 Depot Calibration
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Alignment Instructions

24-2.3.2 In some instances the reserved numbers are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 33:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- VS - Visual Slide
- WC - Workcards

24-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PNs assigned to specific components.

24-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 24-2.3.1, above.

24-3 EXAMPLES OF CATEGORY 33 NUMBERING PATTERNS.

24-3.1 Illustrated parts breakdown for a ballistics computer test set, PN T-101235:

33D5-5-78-4

33	Category 33
D	Special Purpose Test Equipment
5	Armament Equipment Series
5	Computer Subseries
78	Represents PN T-101235
4	Number Reserved for Illustrated Parts Breakdown

24-3.2 Operating and maintenance instructions for a radar analyzer test set, type AN/APM-226:

33D7-10-23-1

33	Category 33
D	Special Purpose Test Equipment
7	Electrical and Electronic Equipment Series
10	Analyzer Subseries
23	Represents Type AN/APM-226
1	Number Reserved for Operating Instructions

24-3.3 Operating instructions for associated equipment electron tube test set, type AN/USM-31:

33AA21-2-1

33	Category 33
A	General Purpose Test Equipment
A	Associated Equipment
21	Tube Analyzer Series
2	Represents Type AN/USM-31
1	Number Reserved for Operating Instructions

24-3.4 Illustrated parts breakdown for magnetic inspection unit, model H144-6AD-1:

33B2-11-14

33	Category 33
B	Inspection Test Equipment
2	Electrical Series
11	Represents Model H144-6AD-1
14	Number Reserved for Illustrated Parts Breakdown

24-3.5 Service instructions for a dynamotor test set, type TS-414/U:

33A1-12-95-2

33	Category 33
A	General Purpose Test Equipment
1	Electrical and Electronic Equipment Series
12	Voltage, Current and Resistance Measuring Equipment Subseries
95	Represents Type TS-414/U
2	Number Reserved for Service Instructions

24-4 CATEGORY 33 NUMBERING SERIES.

33	TEST EQUIPMENT
33-1	AIRFRAME
33A	GENERAL PURPOSE TEST EQUIPMENT
33A1	ELECTRICAL AND ELECTRONIC
33A1-2	Amplifying
33A1-3	Combination Group Test Set
33A1-4	Field Intensity Measuring
33A1-5	Frequency Measuring
33A1-6	Impedance, Standing Wave Ratio Measuring, Noise Meter
33A1-7	Power Measuring, Audio Indicating
33A1-8	Signal Generating
33A1-9	Temperature Measuring, Thermostat
33A1-10	Time Base Measuring, Counting
33A1-11	Vibration
33A1-12	Voltage, Current, Resistance Measuring, Multimeter
33A1-13	Wave Form Measuring, Recording
33A1-14	Interference Measuring
33A1-15	Electrical Circuit Check
33A1-16	Auxiliary Power Plant
33A2	HYDRAULIC
33A2-2	Stand
33A2-3	Gauge
33A2-4	Valve

33A2-5	Cylinder, Actuator	33AA1	ADAPTERS
33A3	MECHANICAL	33AA2	PANELS
33A3-2	Analyzer	33AA3	BLOWERS
33A3-3	Cable Tensiometer	33AA4	BOXES
33A3-4	Torque Tester	33AA4-2	Attenuator
33A3-5	Regulator	33AA4-3	Jack
33A3-6	Unit	33AA4-4	Junction
33A3-7	Actuator, Screw Jack Assembly	33AA4-5	Relay
33A3-8	Anti-Skid	33AA4-6	Shunt
33A3-9	Stand	33AA5	CORDS OR CABLES
33A3-10	Tachometer Generator	33AA6	DECADE RESISTORS
33A3-11	Lock and Latch Assemblies	33AA7	DUMMY LOADS
33A4	PNEUMATIC	33AA8	DYNAMOTORS
33A4-2	Accumulator	33AA9	AIR SUPPLIES
33A4-3	Cabin Heater	33AA10	CHAMBERS
33A4-4	Cabin Leakage	33AA11	FREQUENCY CONVERTERS
33A4-5	Regulator	33AA12	HEADSETS
33A4-6	Valve	33AA13	INVERTERS
33A4-7	Leak	33AA14	JACKS
33A4-8	Pressurization Kit	33AA15	MICROPHONES
33A4-9	Pump	33AA16	PLUGS
33A4-10	Pneumatic Dehydrator, Chemical Dryer	33AA17	POWER SUPPLIES
33A4-11	Air Filter	33AA18	PROBES
33A4-12	Components	33AA19	SHUNTS AND MULTIPLIERS
33A5	VACUUM	33AA20	TEST ANTENNAS
33A5-2	Stand	33AA21	TUBE ANALYZERS
33A6	LIQUIDS	33AA22	VOLTAGE DIVIDERS
33A6-2	Density	33AA23	FITTINGS
33A6-3	Flow Meter	33AA24	CAPSULES
33A6-4	Pressure	33AA25	CHARGERS
33A6-5	Temperature	33AA26	MOTORS
33A6-6	Viscosity	33AA27	METERS (Use 33A1)
33A6-7	Volume	33AA28	HORNS
33A6-8	Analyzer	33AA29	COMPRESSORS (TEST)
33A7	GAS	33AA30	PUMPS
33A7-2	Density	33AA31	VALVES
33A7-3	Flow Meter	33AA32	BLOWERS (See 33AA3)
33A7-4	Pressure	33AA33	AMPLIFIERS (Use 33A1-2)
33A7-5	Temperature	33AA34	SERVOSCOPES
33A7-6	Volume	33AA35	TIMERS
33A7-7	Weight		
33A7-8	Analyzer		
33A8	SOLIDS		
33A8-2	Balancing		
33A8-3	Hardness		
33A8-4	Tensile Strength		
33A8-5	Volume		
33A8-6	Weight		
33A9	TIME		
33A9-2	Watch Recording Device		
33A10	NONAERONAUTICAL ENGINES		
33AA	ASSOCIATED EQUIPMENT		

33AA36	ATTENUATORS	33C4	LABORATORY FIXTURES
33AA37	ACCELERATORS	33D	SPECIAL PURPOSE TEST EQUIPMENT
33AA38	SYNCHRONIZERS	33D1	AIRCRAFT AND MISCELLANEOUS GROUND SUPPORT EQUIPMENT
33AA39	DIGITAL COMPONENTS	33D1-2	Bomber
33AA40	COUPLERS	33D1-3	Cargo
33AA41	CONVERTERS	33D1-4	Fighter
33AA42	COMMUTATORS	33D1-5	Helicopter
33AA43	CALIBRATION UNITS	33D1-6	Liaison
33AA44	KEYBOARDS	33D1-7	Trainer
33AA45	INDICATORS	33D1-8	Drone
33AA46	TELETYPEWRITERS	33D2	AIRCRAFT ACCESSORIES (AIRBORNE)
33AA47	FREQUENCY DIVIDERS	33D2-2	Fire Detector System
33AA48	STORAGE DISPLAY UNITS	33D2-3	Fuel System
33AA49	TRANSLATORS	33D2-4	Generator
33AA50	TRANSPORT MAGNETIC TAPE	33D2-5	Hydraulic System, Hydraulic Servo Actuator
33AA51	RESISTORS	33D2-6	Instrument, Crash Position Instrument
33B	INSPECTION TEST EQUIPMENT	33D2-7	Landing Gear
33B1	CHEMICAL	33D2-8	Navigation System, Simulator Indexing
33B1-2	Penetrants	33D2-9	Oil System
33B2	ELECTRICAL	33D2-10	Oxygen System
33B3	ELECTRONIC	33D2-11	Propeller
33B3-2	Reflectoscopes	33D2-12	Vacuum, Pneumatic System
33B3-3	X-Ray	33D2-13	Aerial Refueling
33B4	OPTICAL	33D2-14	Cabin Heat, Vent
33B4-2	Inspectoscope, Borescope	33D2-15	Weight and Balance System
33B4-3	Comparator	33D2-16	De-Icing
33B4-4	Binoculars	33D2-17	Alternator
33B4-5	Theodolite	33D2-18	Air-Conditioning
33B4-6	Collimator	33D2-19	Warning System
33B4-7	Indicator	33D2-20	Explosion Extinguishing
33B4-8	Calibration	33D2-21	Loader Assembly
33B4-9	Power Meter	33D2-22	Computer
33B4-10	Visual	33D2-23	Brake System
33B4-11	Photometric	33D2-24	Helium Charging System
33B5	INSPECTION STANDS	33D2-25	Recording System and Components
33B6	X-RAY (Also see 33B3-3)	33D2-26	Assessment System and Components
33B7	SHOP EQUIPMENT	33D2-27	Electrical System
33B8	LIGHTS AND LAMPS	33D2-28	Pressurization System
33C	LABORATORY TEST EQUIPMENT	33D2-29	Variable Air Inlet System
33C1	ANALYTICAL AND LEAK DETECTORS	33D2-30	Pod Assembly
33C2	MEASUREMENT	33D2-31	Launch Gear Assembly
33C3	TEMPERATURE	33D2-32	Starter
		33D2-33	Augmenter System
		33D2-34	Ejection System (Canopy)
		33D2-35	Stabilization System
		33D2-36	Hoist Assembly
		33D2-37	Aerial Delivery System
		33D2-38	Guidance System
		33D2-39	Environmental Control System

33D2-40	Stall Prevention System	33D4-7	Turboprop
33D2-41	All Weather Landing System	33D5	ARMAMENT
33D2-42	Cargo Loading	33D5-2	Amplifier
33D2-43	Rescue and Survival	33D5-3	Cable, Circuit
33D2-44	Radome System	33D5-4	Compass
33D2-45	Egress System	33D5-5	Computer
33D2-46	Head-Up Display Set	33D5-6	Calibration
33D2-47	Atmospheric Research	33D5-7	Gyroscope
33D3	AUTOMATIC FLIGHT CONTROL SYSTEMS (AIRBORNE)	33D5-8	Radar
33D3-2	Amplifier	33D5-9	Sight
33D3-3	Voltage, Current	33D5-10	Turret
33D3-4	Control Assembly, Yaw Damper	33D5-11	Platform
33D3-5	Electron Tube	33D5-12	System
33D3-6	Gyroscope	33D5-13	Table
33D3-7	Power Supply	33D5-14	Voltage, Current
33D3-8	Servo	33D5-15	Test Bench
33D3-9	System, Yaw Damper	33D5-16	Control
33D3-10	Table, (Rate, Speed, Variable, Rate Gyro)	33D5-17	Dehydrator
33D3-11	Ejector	33D5-18	Timing, Sequencing
33D3-12	Linkage Assembly	33D5-19	Cord (Do not use)
33D3-13	Screwjack	33D5-20	Simulator
33D3-14	Converter	33D5-21	Panel
33D3-15	Actuator	33D5-22	Radaltator, Evaluators
33D3-16	Reactor	33D5-23	Power Supply
33D3-17	Indicator	33D5-24	Components
33D3-18	Spike Position	33D5-25	Leak Test
33D3-19	Autopilot (See 33D3-9 Also)	33D5-26	Phototube
33D3-20	Valve	33D5-27	Astro Tracker
33D3-21	Accelerometer	33D5-28	Spring Tester
33D3-22	Drive Assembly	33D5-29	Squib
33D3-23	Transducer	33D5-30	Pylon
33D3-24	Computer	33D5-31	Boresight
33D3-25	Adapter, Fixture	33D5-32	Indicator
33D3-26	Card Assembly	33D5-33	Sensor
33D3-27	Relay Unit	33D5-34	Compensator
33D3-28	Regulator	33D5-35	Converter
33D3-29	Starter	33D5-36	Switch
33D3-30	Limiter	33D5-37	Repeater
33D3-31	Leak Test	33D5-38	Generator
33D3-32	Shifter	33D5-39	Antenna
33D3-33	Rack, Panel	33D5-40	Detector
33D3-34	Comparator	33D5-41	Multiplier
33D3-35	Coupler	33D5-42	Receiver - Transmitter
33D3-36	Module	33D5-43	Display Unit
33D3-37	Electronic Plug-In	33D5-44	Gear Accuracy
33D3-38	Transmitter	33D5-45	Limiter
33D3-39	Altimeter	33D5-46	Comparator, Analyzer
33D3-40	Switch	33D5-47	Synchronizer
33D3-41	Sensor	33D5-48	Drive
33D4	AIRCRAFT ENGINES	33D5-49	Infrared Tester
33D4-2	Reciprocating	33D5-50	Tool Kit
33D4-3	Rocket	33D5-51	Ratiometers (Use 33A1)
33D4-4	Ramjet	33D5-52	Transducer
33D4-5	Pulsejet	33D5-53	Rack
33D4-6	Turbojet	33D5-54	Plug-In Assembly
		33D5-55	Filter
		33D5-56	Spray Tank
		33D5-57	Rocket

33D5-58	Nitrogen Circulator	33D7-42	Programmer
33D5-59	Firing Pin	33D7-43	Rectifier
33D5-60	Guided Glide Weapon	33D7-44	Radar
33D5-61	Destructor	33D7-45	Calibration
33D5-62	Eluminator	33D7-46	Beacon
33D5-63	Stores	33D7-47	Control, Temperature Controllers
33D5-64	Motor	33D7-48	Miss Distance Measuring
33D5-65	Collimator	33D7-49	Electronic Circuit Plug-In
33D5-66	Dispenser	33D7-50	Adapters, Interface Unit
33D5-67	Fuze	33D7-51	Reconnaissance
33D6	AUTOMOTIVE	33D7-52	Cylinder
33D6-2	Brake	33D7-53	Compressor
33D6-3	Engine	33D7-54	Go-No-Go
33D6-4	Headlight	33D7-55	Discriminator
33D6-5	Instrument	33D7-56	Oscillator
33D6-6	Wheel	33D7-57	Electron Tube
33D7	ELECTRICAL AND ELECTRONIC	33D7-58	Device, Drive
33D7-2	Amplifier	33D7-59	Generator
33D7-3	Computer	33D7-60	Comparator
33D7-4	Intercommunication	33D7-61	Unit, Auxiliary Power Unit
33D7-5	Phasing and Null Station	33D7-62	Meteorological
33D7-6	Power Supply	33D7-63	Platform, Gyroscope, Accelerometer
33D7-7	Quartz Crystal Unit	33D7-64	Telegraph
33D7-8	Simulator	33D7-65	Evaluator
33D7-9	Gyroscope, Gyroscope Platform	33D7-66	Matrix Unit
33D7-10	Analyzer	33D7-67	Anti-Aircraft Fire Control
33D7-11	Radome	33D7-68	Memory
33D7-12	Data Recorder, Reader	33D7-69	Magnetic Drum, Disk
33D7-13	Countermeasures	33D7-70	Binary
33D7-14	Identification, Friend-or-Foe - Radar	33D7-71	Radio
33D7-15	RF Head	33D7-72	Driver
33D7-16	Air Data System	33D7-73	Target Drone
33D7-17	Converter	33D7-74	Refrigeration
33D7-18	Relay	33D7-75	Multiplexer
33D7-19	Selector	33D7-76	Card
33D7-20	Indicator	33D7-77	Display
33D7-21	Shift Register	33D7-78	Interrogator
33D7-22	Detector, Leak Detectors	33D7-79	Motor
33D7-23	Servo	33D7-80	Laser
33D7-24	Video	33D7-81	Readout
33D7-25	Console	33D7-82	Certification
33D7-26	Teletypewriter	33D7-83	Buffer
33D7-27	Antenna Boresight	33D7-84	Error Corrector
33D7-28	Voltage, Current	33D7-85	Cold Proof Load Tester
33D7-29	Transmitter, Transceiver	33D7-86	Monitor
33D7-30	Telemetering	33D7-87	Compensator
33D7-31	Circuit	33D7-88	TV Monitor
33D7-32	Pods	33D7-89	Mixer
33D7-33	Module, Scanner Test Station	33D7-90	Assembler
33D7-34	Tracking	33D7-91	Editor
33D7-35	Antenna	33D7-92	PROMS (Programmable Read-Only Memory System)
33D7-36	Receiver	33D7-93	EROMS (Eraseable Read-Only Memory System)
33D7-37	Detection Radar Data Takeoff	33D7-94	ROMS (Read-Only Memory System)
33D7-38	System, Circuit Board	33D7-95	Blanking
33D7-39	Scorer	33D7-96	Processor
33D7-40	Time Delay		
33D7-41	Routing Assembly		

33D7-97	EPROMS (Eraseable Programmable Read-Only Memory Systems)	33D9-56	Platform
33D7-98	Vessel Assembly	33D9-57	Meter, Measuring
33D7-99	Outlet Assembly	33D9-58	Generator, Controller
33D9	GUIDED MISSILES	33D9-59	Electrical System
33D9-2	Fuel System	33D9-60	Interrogator
33D9-3	Guidance System	33D9-61	System Tester
33D9-4	Hydraulic	33D9-62	Transponder
33D9-5	Power Plant (Engine)	33D9-63	Acid System
33D9-6	Power Supply	33D9-64	Re-Entry Vehicle
33D9-7	Flight Control	33D9-65	Motor Generator
33D9-8	Selector Van	33D9-66	Synchro Zeroing
33D9-9	Missile Components	33D9-67	Computer (See 33D9-53)
33D9-10	Release Navigation Computer	33D9-68	Cable
33D9-11	Generator and Case Assembly	33D9-69	Jack Box
33D9-12	Hoist Support Boom	33D9-70	Density
33D9-13	Payload	33D9-71	Gimbal Assembly
33D9-14	Simulator	33D9-72	Gyroscope
33D9-15	Amplifier	33D9-73	Fluid Transfer System
33D9-16	Power Box	33D9-74	Programmer Device, Fault Isolation
33D9-17	Control	33D9-75	Transducer
33D9-18	Actuator, Motor	33D9-76	Network
33D9-19	Adapter	33D9-77	Distributor
33D9-20	Fuzing System	33D9-78	Propellant Handling
33D9-21	Oscillator	33D9-79	Auxiliary Ring
33D9-22	Gauge	33D9-80	Hydro-Pneumatic Trailer
33D9-24	Resolver	33D9-81	Liquid Oxygen Trailer
33D9-25	Timers	33D9-82	Power Distribution Trailer
33D9-26	Ignitor	33D9-83	Fault Isolation, Security System
33D9-27	Targeting Tester		Alarm Set
33D9-28	Frequency Meter	33D9-84	Leakage Detector
33D9-29	Indicator, Counter	33D9-85	Optical
33D9-30	Checkout	33D9-86	Checkout Tray
33D9-31	Pneumatic	33D9-87	Signal Conditioner
33D9-32	Selector	33D9-88	Relay
33D9-33	Mechanical Instrument	33D9-89	Instrumentation
33D9-34	Exerciser	33D9-90	Stabilization Filter
33D9-35	Converter	33D9-91	Engine (See 33D9-5)
33D9-36	Battery	33D9-92	Valve (See 33D9-106)
33D9-37	Inverter	33D9-93	Thermal Resistor
33D9-38	Circuit	33D9-94	Adjuster
33D9-39	Calibration	33D9-95	Moisture Content Tester
33D9-40	Analyzer, Dynamic Signal	33D9-96	Handler's Environment
33D9-41	Inspection Equipment Tester	33D9-97	Telephone
33D9-42	Radar	33D9-98	Servo
33D9-43	Command	33D9-99	Confidence Tester
33D9-44	Beacon	33D9-100	Message Generator, Sweep
33D9-45	Launch Control	33D9-101	Continuity Tester
33D9-46	Antenna	33D9-102	Cannister
33D9-47	Transmitter and Receiver	33D9-103	Dead Weight
33D9-48	Pack	33D9-104	Recording
33D9-49	Rectifier	33D9-105	Triplexer
33D9-50	Reference	33D9-106	Valve (See 33D9-92)
33D9-51	Tape	33D9-107	Verifier
33D9-52	Junction Box	33D9-108	Safety and Arming
33D9-53	Computer	33D9-109	Sensing Instrument
33D9-54	Miscellaneous Test Set	33D9-110	Injection
33D9-55	Pump	33D9-111	Monitor
		33D9-112	Data Link

33D9-113	Insulation	33D10-22	Radar Recording Camera
33D9-114	Rapid Firing	33D10-23	Viewfinder
33D9-115	Transistorized Unit	33D10-24	Detector
33D9-116	Video Unit, Monitor	33D10-25	Photogrammetric
33D9-117	Reader (Decoder)	33D10-26	Mounting Base, Chassis
33D9-118	Oscilloscope (Do not use)	33D10-27	Mount (Use 33D10-26)
33D9-119	Trucks	33D10-28	Analyzer
33D9-120	Gas Systems	33D10-29	Switch
33D9-121	Offensive Subsystem	33D10-30	Balance Tester
33D9-122	Heater, Cooler	33D10-31	Photo Recording Unit
33D9-123	Electronic Component	33D10-32	Synchronizer
33D9-124	Trainer	33D10-33	Converter
33D9-125	Signal Generator (See 33D9-100)	33D10-34	Drive Assembly
33D9-126	Roofs and Erector	33D10-35	Photoflash
33D9-127	Ordnance	33D10-36	Calibrator
33D9-128	Panel, Release Control	33D10-37	Photo Adapter Unit
33D9-129	Module	33D10-38	Fixture
33D9-130	Cylinder	33D10-39	Cooling Unit
33D9-131	Switch	33D10-40	Transducer
33D9-132	Sensitol Unit	33D10-41	Printer
33D9-133	Communication	33D10-42	Encoder
33D9-134	Umbilical	33D10-43	System
33D9-135	Destruction System	33D10-44	Computer
33D9-136	Sequence Assembly	33D10-45	Cassette
33D9-137	Alarm	33D10-46	Module
33D9-138	Contamination Unit	33D10-47	Infrared Photo Reconnaissance
33D9-139	Sump Tank	33D10-48	Focusing Aid
33D9-140	Alignment	33D10-49	Verifier
33D9-141	Discriminator	33D11	PHYSIOLOGICAL
33D9-142	Accelerometer	33D11-2	Lie Detector
33D9-143	Degausser	33D11-3	Stereoscopic
33D9-144	Astrotracker	33D11-4	Test Chamber
33D9-145	Receiver	33D12	TRAINING DEVICES
33D9-146	Tuning Head	33D12-2	Current and Voltage
33D9-147	Ejector Rack	33D12-3	Recorder
33D9-148	Common Missile Assembly	33D12-4	Servo
33D9-149	Missile Bit	33D12-5	System
33D10	PHOTOGRAPHIC EQUIPMENT	33D12-6	Console
33D10-2	Camera	33D12-7	Tow Target
33D10-3	Diaphragm Test Fixture	33D13	FLIGHT SIMULATORS
33D10-4	Ejector	33D13-2	Bomber
33D10-5	Collimator	33D13-3	Cargo
33D10-6	Servo Test	33D13-4	Test Rack
33D10-7	Developer, Processor	33D13-5	Test Cart
33D10-8	Magazine	33DA	ASSOCIATED EQUIPMENT
33D10-9	Shutter Trip, Timer	33DA1	ADAPTERS
33D10-10	Simulator	33DA2	RELAYS
33D10-11	Spot Scanner	33DA3	PANEL ASSEMBLIES
33D10-12	Amplifier	33DA4	EVALUATORS
33D10-13	Control	33DA5	MONITORS
33D10-14	Modulator, Demodulator	33DA6	INTERROGATORS
33D10-15	Power Supply	33DA7	ENCODERS
33D10-16	Measuring, Counting		
33D10-17	Mockup System		
33D10-18	Oscillator		
33D10-19	Indicator		
33D10-20	Table		
33D10-21	Gyroscope		

33DA8	GENERATORS	33DA44	MEMORY UNITS
33DA9	CONTROLS	33DA45	SIMULATORS
33DA10	RF LINK	33DA46	DETECTORS
33DA11	POWER SUPPLIES	33DA47	BLOWERS (See 35E)
33DA12	BOARDS, MULTI-MODULE	33DA48	MODULATORS AND DEMODULATORS
33DA13	POWER DISTRIBUTION	33DA49	FILTERS
33DA14	AIR- AND SELF- TEST	33DA50	DELAY CIRCUITS
33DA15	MISSILE ELECTRONICS	33DA51	AIR CONDITIONING (See 35E)
33DA16	SERVOS	33DA52	MICROWAVE
33DA17	COMPARATORS	33DA53	FREQUENCY SOURCE
33DA18	TIMERS (Use 33A1-10)	33DA54	LIMIT COUNTERS
33DA19	PROGRAMMERS	33DA55	RESOLVERS
33DA20	BOX ASSEMBLIES, REGULATOR CHASSIS	33DA56	ANTENNA DRIVERS
33DA21	FIXTURE ASSEMBLIES	33DA57	SOURCE, RADIO-FREQUENCY
33DA22	LOAD BANKS	33DA58	CHECKERS
33DA23	LOAD BOXES (Use 33DA22)	33DA59	BRIDGES
33DA24	REGULATORS	33DA60	PLUG-IN ASSEMBLIES
33DA25	BOXES	33DA61	COMPRESSORS (See 34Y1)
33DA26	CHARGERS	33DA62	CYLINDERS
33DA27	CONVERTERS	33DA63	VOLTMETERS (Use 33A1-12)
33DA28	PNEUMATIC SYSTEMS	33DA64	CIRCUIT BREAKERS
33DA29	AMPLIFIERS	33DA65	REGISTERS
33DA30	RECORDERS	33DA66	MICRO-POSITIONERS
33DA31	OSCILLOSCOPES	33DA67	FANS AND BLOWERS (See 35E)
33DA32	DRAWERS	33DA68	DISC ASSEMBLIES
33DA33	CHAMBERS	33DA69	PRESELECTOR ASSEMBLIES
33DA34	DELAY LINES	33DA70	VERNISTATS
33DA35	CONSOLES	33DA71	SYNCHRONIZERS
33DA36	VALVES	33DA72	TRANSMITTERS
33DA37	ATTACHMENTS	33DA73	DIGITIZERS
33DA38	TRANSFORMERS AND TRANSMITTERS	33DA74	COMMUTATORS
33DA39	METERS AND MEASURING EQUIPMENT	33DA75	GAUGES
33DA40	PUMPS	33DA76	ACCUMULATORS
33DA41	ANALYZERS	33DA77	THERMOSTATS
33DA42	INDICATORS	33DA78	LEAK TRACING DEVICES (See 33D3-31 and 33D9-84)
33DA43	DRIVES AND GEAR ASSEMBLIES	33DA79	PRESSURE BOXES (Use 33DA20)
		33DA80	PLATE ASSEMBLIES

33DA81	MOTORS AND ACTUATORS (See 33D7-79)	33DA108	PRINTERS
33DA82	COMPUTERS (See 33D7-3)	33DA109	DIVIDING HEADS
33DA83	COMPENSATORS	33DA110	TRANSPORTS
33DA84	TANKS	33DA111	PLOTTERS
33DA85	BENCHES	33DA112	LOADERS
33DA86	SWITCHES	33DA113	TAPE HEADS
33DA87	TABLES	33DA114	OPTICAL UNITS
33DA88	THERMOMETERS, TEMPERATURE INDICATORS	33DA115	TAPES AND TAPE COMPONENTS
33DA89	STARTERS	33DA116	TARGETS
33DA90	RECTIFIERS	33DA117	POSITIONERS
33DA91	GRAVITY TESTERS	33DA118	APPLICATORS
33DA92	CALIBRATORS (See 33D7-45)	33DA119	MODULES (See 33D7-33)
33DA93	TRANSPONDER SETS	33DA120	TELESCOPES
33DA94	ALTERNATORS	33DA121	CABINETS
33DA95	BRAKE ASSEMBLIES	33DA122	STANDARDS
33DA96	DOOR AND WINDOW ASSEMBLIES	33DA123	TEST KITS
33DA97	TRANSDUCERS AND FLOWSENSORS	33K	CALIBRATION PROCEDURES
33DA98	PROBES	33K1	PRECISION MEASURING EQUIPMENT (PME), VOLTAGE, CURRENT, AND POWER
33DA99	HORNS	33K2	PME, IMPEDANCE
33DA100	COUPLING ASSEMBLIES	33K3	PME, FREQUENCY
33DA101	CLEANERS (Use 34Y2)	33K4	PME, MICROWAVE
33DA102	COOLER UNITS	33K5	PME, TEMPERATURE
33DA103	CABLE ASSEMBLIES	33K6	PME, MECHANICAL
33DA104	TERMINALS	33K7	PME, RADIAC, AND SPECIAL WEAPONS
33DA105	JUMPER ASSEMBLIES	33K8	PME, ELECTRICAL
33DA106	MANIFOLDS	33K9	AUTOMATIC TEST SYSTEMS
33DA107	HOSE AND REELS		

CHAPTER 25

CATEGORY 34 - SHOP MACHINERY AND SHOP SUPPORT EQUIPMENT

25-1 GENERAL.

25-1.1 Category 34 contains five shop machinery and shop support equipment systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 34 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 25-2.

25-1.2 TO data pertaining to more than one system is numbered in the category general series.

25-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

25-2 NUMBERING PATTERNS.

25-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series within a system.

25-2.1.1 Part one is always the numeric 34 identifying Category 34.

25-2.1.2 Part two is an alpha character identifying the shop machinery systems, i.e., C - cutting machines; F - finishing machines; G - forming machines; W - welding and heat treating equipment; and Y - shop support equipment.

25-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 25-4.

25-2.2 **GROUP TWO.** TO numbering patterns in Category 34 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

25-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

25-2.2.2 If the TO number contains four basic groups, the equipment series identified in part

three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

25-2.3 **GROUP THREE.**

25-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 34:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

25-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 34:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

25-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

25-2.4 **GROUP FOUR.** When the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 25-2.3.1, above.

25-3 EXAMPLES OF CATEGORY 34 NUMBERING PATTERNS.

25-3.1 Operating instructions with parts breakdown for a drill press, model 1024:

34C2-3-12-1

34	Category 34
C	Cutting Machines
2	Metal Cutting Machine Series
3	Drill Press Subseries
12	Represents Model 1024
1	Number Reserved for Operating Instructions

25-3.2 Installation instructions for a honing machine, model 244:

34F2-3-13-7

34	Category 34
F	Finishing Machines
2	Metal Finishing Series
3	Hone Subseries
13	Represents Model 244
7	Number Reserved for Installation Instructions

25-3.3 An overhaul instruction for a low-pressure air compressor, model MS11:

34Y1-132-3

34	Category 34
Y	Shop Support Equipment
1	Air Compressor Series
132	Represents Model MS11
3	Number Reserved for Overhaul Instructions

25-4 CATEGORY 34 NUMBERING SERIES.

34 SHOP MACHINERY AND SHOP SUPPORT EQUIPMENT

34C CUTTING MACHINES

34C1 LEATHER

34C2 METAL

34C2-2 Boring

34C2-3 Drill Press

34C2-4 Lathe

34C2-5 Milling

34C2-6 Planer

34C2-7 Punch Press

34C2-8 Saw

34C2-9 Shaper

34C2-10 Shear

34C2-11 Reamer Driver

34C2-12 Threader

34C2-13 Disintegrating

34C2-14 Drum

34C2-15 Routing

34C2-16 Centering

34C2-17 Keyseater

34C3 PAPER

34C3-2 Shredder

34C3-3 Drill

34C4 WOOD

34C4-2 Jointer and Mortiser

34C4-3 Lathe (Use 34C4-8)

34C4-4 Planer

34C4-5 Router

34C4-6 Saw

34C4-7 Shaper

34C4-8 Lathe

34C4-9 Boring

34C4-10 Milling

34F FINISHING MACHINES

34F1 GLASS

34F2 METAL

34F2-2 Grinder

34F2-3 Honing

34F2-4 Sharpener

34F2-5 Lapping

34F2-6 Electroplating

34F2-7 Vibratory

34F2-8 Gear Hobbing

34F3 WOOD

34F3-2 Floor

34F3-3 Sander

34F3-4 Surfacers

34G FORMING MACHINES

34G1 METAL

34G1-2 Brakes

34G1-3 Forger

34G1-4 Header

34G1-5 Press

34G1-6 Roll

34G1-7 Shaper

34G1-8 Grooving

34G1-9 Flaring

34G1-10 Bending

34G1-11 Coiler

34G1-12 Stamping

34G1-13 Sheet Metal

34G1-14 Wire

34G2 RUBBER AND PLASTICS

34W WELDING AND HEAT TREATING EQUIPMENT

34W1 FURNACES, INCINERATORS

34W2 OVENS AND DEHYDRATORS

34W3 SOLDERING POTS

34W4 WELDERS

34W5 EXHAUSTERS

34W6 FORGES

34W7	SOLDERING IRON	34Y17	LUBRICATING EQUIPMENT
34W8	REGULATORS	34Y17-2	Grease Gun
34W9	CHAMBERS	34Y17-3	Oil Gun
34Y	SHOP SUPPORT EQUIPMENT	34Y17-4	Lubricator
34Y1	AIR COMPRESSORS, PUMPS	34Y17-5	Pump
34Y2	CLEANERS	34Y17-6	Oil Purification Unit
34Y3	DEGREASERS	34Y17-7	Gun Assembly (See 34Y31)
34Y4	PAINT SPRAY EQUIPMENT	34Y18	WATER SEPARATORS (FILTERS)
34Y4-2	Booth	34Y19	MOTORS
34Y4-3	Sprayer	34Y20	VALVES
34Y4-4	Rejuvenator	34Y20-2	Solenoid Operated
34Y4-5	Spray Gun	34Y20-3	Safety
34Y4-6	Paint Mixer	34Y20-4	Control
34Y5	PUMPS	34Y21	ADAPTERS
34Y5-2	Water	34Y22	DIMPLING MACHINES
34Y5-3	Vacuum	34Y23	CLAMPS
34Y5-4	Air	34Y23-2	Flanging
34Y5-5	Oil	34Y24	DRYERS
34Y5-6	Hand	34Y24-2	Sand
34Y5-7	Liquid	34Y25	VANS
34Y6	RIVETING MACHINES	34Y25-2	Telescoping
34Y7	SEWING MACHINES	34Y25-3	Cabinet
34Y8	TANKS	34Y25-4	Maintenance Shop
34Y8-2	Dipping	34Y26	STANDS
34Y9	TIRE REPAIR EQUIPMENT	34Y26-2	Engine Stand
34Y9-2	Tire Spreader	34Y26-3	Axle
34Y9-3	Vulcanizer	34Y27	MAGNETIZERS
34Y9-4	Recapping Machine	34Y28	MOTOR GENERATORS
34Y9-5	Tire Press	34Y29	STAPLERS
34Y9-6	Breaker	34Y30	HOSE ASSEMBLY MACHINES
34Y9-7	Retreading Mold	34Y31	SEALANT EQUIPMENT
34Y9-8	Safety Inflation Guard	34Y32	PRESSES
34Y9-9	Reel	34Y33	CABINETS
34Y10	WIRE MARKING MACHINES	34Y34	ALIGNING EQUIPMENT
34Y11	WRAPPING AND PACKAGING EQUIPMENT	34Y34-2	Connecting Rod Aligner
34Y11-2	Dehydrator	34Y35	ENGRAVING MACHINES
34Y11-3	Nail Machine	34Y35-2	Pantograph
34Y11-4	Sealer	34Y36	LINKING MACHINES
34Y11-5	Stitcher	34Y37	DUST FREE BENCHES
34Y11-6	Tying Machine	34Y38	MILLING MACHINES (FOUNDRY)
34Y11-7	Sprayer, Protective Coating	34Y39	THAWING MACHINES
34Y12	UNIVERSAL VALVING MACHINES	34Y40	DESCALING MACHINES
34Y14	GAS TRANSFER AND STORAGE	34Y41	DRYERS
34Y14-2	Carbon Dioxide	34Y42	CONTROL UNITS
34Y14-3	Oxygen	34Y43	CHAMBERS
34Y15	STILLS		
34Y15-2	Solvent		
34Y15-3	Water		
34Y16	VACUUM PUMPS (Use 34Y5)		

CHAPTER 26

CATEGORY 35 - GROUND HANDLING, SUPPORT, AIR AND MISSILE BASE OPERATING EQUIPMENT

26-1 GENERAL.

26-1.1 Category 35 contains eight ground handling, support and operating systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 35 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 26-2.

26-1.2 TO data pertaining to more than one system is numbered in the category general series.

26-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

26-2 NUMBERING PATTERNS.

26-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series within a system.

26-2.1.1 Part one is always the numeric 35 identifying category 35.

26-2.1.2 Part two is an alpha character identifying the ground handling, support or operating system, i.e., A - aircraft maintenance and inspection equipment; B - aircraft handling and weighing equipment; C - electric power supplies; D - loading and servicing equipment; E - air base utility equipment; G - aircraft ground support equipment; and M - missile erection and launching equipment. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., AA, and CA.

26-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 26-4.

26-2.2 **GROUP TWO.** TO numbering patterns in Category 35 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns.

26-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric

characters representing the model, type or PN assigned to specific components.

26-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

26-2.3 **GROUP THREE.**

26-2.3.1 When a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 35:

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 5 DCSC Technical Maintenance Standards
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests

26-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 35:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

26-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

26-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group either identifies specific types of TOs described in paragraph 26-2.3.1, or it identifies a sequence number when alpha characters were used in group three as described in paragraph 26-2.3.2. Sequence numbers are described in paragraphs 1-9.2 through 1-9.6.

26-3 EXAMPLES OF CATEGORY 35 TO NUMBERING PATTERNS.

26-3.1 Operating instructions for a regulated power supply, model LP-410A-FM:

35C1-2-462-1

35	Category 35
C	Electric Power Supplies
1	System Series
2	Electrical Subseries
462	Represents Model LP-410A-FM
1	Number Reserved for Operating Instructions

26-3.2 Illustrated parts breakdown for runway selector switch PN 3303760:

35F14-2-4

35	Category 35
F	Field Lighting and Electrical Equipment
14	Switch Series
2	Represents PN 3303760
4	Number Reserved for Illustrated Parts Breakdown

26-3.3 An overhaul instruction for compressed oxygen cylinder trailer, type AF/M32R-3:

35D3-6-27-23

35	Category 35
D	Loading and Servicing Equipment
3	Truck, Dolly, and Trailer Series
6	Servicing Truck and Trailer Subseries
27	Represents Type AF/M32R-3
23	Number Reserved for Overhaul Instructions

26-4 CATEGORY 35 NUMBERING SERIES.

35	GROUND HANDLING, SUPPORT, AIR, AND MISSILE BASE OPERATING EQUIPMENT
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35A	AIRCRAFT AND MISSILE MAINTENANCE AND INSPECTION EQUIPMENT
-----	---

35A1	DOCKS
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35A2	JACKS
35A2-2	Aircraft
35A2-3	Automotive
35A2-4	General Purpose
35A2-5	Special Purpose

35A3	LADDERS AND STAIRCASES
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35A4	STANDS
35A4-2	Adjustable
35A4-3	Nonadjustable
35A4-4	Missile Platform
35A4-5	Missile Stand
35A4-6	Blacklight Inspection (Do not use)
35A4-7	Storage
35A4-8	Drain

35A5	JACKPADS
------	----------

35A6	RACKS
------	-------

35AA	ASSOCIATED EQUIPMENT
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35AA2	JACK COMPONENTS
35AA2-2	Cylinder
35AA2-3	Pump
35AA2-4	Valve

35AA3	(Not used)
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35AA4	STAND COMPONENTS
35AA4-2	Valve
35AA4-3	Cable Assembly
35AA4-4	Pump
35AA4-5	Coupling
35AA4-6	Adapter

35B	AIRCRAFT AND MISSILE HANDLING AND WEIGHING EQUIPMENT
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35B1	GROUND LOCK ASSEMBLIES
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35B2	WEIGHING EQUIPMENT
35B2-2	Aircraft
35B2-3	Vehicle
35B2-4	Missile

35B3	SCALES
35B3-2	Balance
35B3-3	Counting
35B3-4	Platform

35B4	STEERING BARS
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35B5	TOWBARS
------	---------

35B6	TURNTABLES
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35B7	MISSILE STANDS (Use 35A4)
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35B8	SKIDS	35CA18	MOUNTS
35B8-2	Portable	35CA19	SPEED REDUCERS
35B9	CHOCK ASSEMBLIES	35CA20	STARTERS
35B10	PRY BARS	35CA21	GOVERNORS
35B10-2	Wheeled	35CA22	PLUGS
35C	ELECTRIC POWER SUPPLIES	35CA23	TURBOCHARGERS
35C1	SYSTEMS	35CA24	ALTERNATORS
35C1-2	Electrical	35CA25	TRANSDUCERS
35C1-3	Combination	35CA26	STABILIZERS
35C1-4	Converter	35CA27	OSCILLATORS
35C1-5	Voltage Regulator	35CA28	ADAPTERS
35C1-6	Inverter	35CA29	MONITORS
35C1-7	Transfer Panel	35D	AIRCRAFT AND MISSILE LOADING AND SERVICING EQUIPMENT
35C2	GENERATORS	35D1	CABLEWAYS
35C2-2	Electric Motor Driven	35D2	CONVEYORS
35C2-3	Engine Driven	35D3	TRUCKS, DOLLIES, AND TRAILERS
35C2-4	Missile Generator Sets (Use 35C2-3)	35D3-2	Bomb
35C3	RECTIFIERS	35D3-3	Engine, Truck Engine Transport
35C3-2	Battery Charger	35D3-4	Fuselage
35C3-3	Power Supply	35D3-5	Propeller
35C3-4	Magneto Charger	35D3-6	Servicing Unit
35C4	TURBOCHARGERS	35D3-7	Aircraft
35CA	ASSOCIATED EQUIPMENT	35D3-8	Landing Gear
35CA1	BOXES	35D3-9	Lift
35CA1-2	Control	35D3-10	Air-Conditioning
35CA1-3	Junction	35D3-11	Missile, Trailer Transporter-Erector
35CA2	CABINETS	35D3-12	Antenna
35CA2-2	Distribution	35D3-13	Turret (Trailer)
35CA3	CABLES AND CABLE SYSTEMS	35D3-14	Bomb Sight
35CA4	CHARGERS	35D3-15	Flush and Disposal
35CA4-2	Magnetic	35D3-16	Wheel Change
35CA5	FAN ASSEMBLIES	35D3-17	Lavatory
35CA6	PANELS	35D3-18	Hydraulic
35CA7	CONTROLS, OVERVOLTAGE PROTECTION MODULES	35D3-19	Nitrogen (See 35D3-6 also)
35CA8	PUMPS	35D3-20	Cowling
35CA9	CONTACTORS (Do not use)	35D3-21	Alternator Pack
35CA10	RELAYS	35D3-22	Tow Target
35CA11	DRIVES AND GEAR MOTORS	35D3-23	Radar Maintenance
35CA12	VALVES	35D3-24	Platform
35CA13	CLUTCH ASSEMBLIES	35D3-25	Missile Fuel
35CA14	FILTERS	35D3-26	Wing
35CA15	HYDRAULIC MOTORS	35D3-27	Fire Control System
35CA16	OIL COOLERS	35D3-28	Instrument
35CA17	AXLE ASSEMBLIES	35D3-29	Missile (See 35D3-11 also)
		35D3-30	Cable
		35D3-31	Oil Servicing
		35D3-32	Crash Removal

35D3-33	Test Equipment	35D8-12	Fuselage
35D3-34	Pod	35D8-13	Engine Pylon
35D3-35	Spray	35D8-14	Ejection Seat
35D3-36	Smoke Generator	35D8-15	Aircraft Engine
35D3-37	Field Preflight	35D8-16	Miscellaneous
35D3-38	Radome	35D9	LOADING DOCKS
35D3-39	Chassis Assembly	35D10	(Not used)
35D3-40	Chaff and Decoy Rocket	35D11	BINS
35D3-41	Corrosion Control	35D11-2	Cargo
35D3-42	Test Station Bay	35D12	STARTING EQUIPMENT
35D3-43	Reel Winder	35D12-2	Gas Turbine
35D3-44	Infrared Unit	35D12-3	Adapters
35D3-45	Fairlead Assembly	35D13	AUXILLIARY LOADING AND
35D3-46	Camera		SERVICING
35D3-47	Seat	35D13-2	Missile
35D4	HOISTS	35D14	BEAM ASSEMBLIES
35D4-2	Electric	35D15	TANKS
35D4-3	Hydraulic	35D15-2	Liquid Oxygen
35D4-4	Mechanical	35D16	MANIFOLDS AND MANIFOLD KITS
35D4-5	Pneumatic	35D16-2	Drain
35D4-6	Engine Driven	35D17	DRYING UNITS
35D4-7	Electro-Mechanical	35D18	FILL UNITS
35D5	LIFTS	35D19	ADAPTERS (Use 35DA3-6)
35D5-2	Electric	35D20	CORD ASSEMBLIES
35D5-3	Hydraulic	35D20-2	Remote Control
35D5-4	Mechanical	35D21	SPREADERS
35D5-5	Pneumatic	35D21-2	Engine
35D5-6	Remote Control	35D22	PURGERS (Use 35E22-2)
35D6	SLINGS	35D23	REGULATORS (Use 35E23)
35D6-2	Engine, Hoisting, Handling	35D24	SIMULATORS
35D6-3	Fuselage	35D24-2	Missile
35D6-4	Empennage	35D25	FIXTURE ASSEMBLIES
35D6-5	Bomb	35D25-2	Missile Rigging
35D6-6	Missile	35D25-3	Breakaway Attachment
35D6-7	Propeller	35D25-4	Elevon Installation and Removal
35D6-8	Canopy	35D25-5	Torquing
35D6-9	Turret	35D25-6	Bolster Assembly
35D6-10	Pylon	35D25-7	Puller Assembly
35D6-11	Wing	35D25-8	Handling
35D6-12	Inertial Guidance System	35D25-9	Landing Gear
35D6-13	Landing Gear	35D25-10	Engine
35D6-14	Crash Removal	35D25-11	Support
35D6-15	Door	35D25-12	Capsule
35D6-16	Scanner	35D25-13	Nozzle
35D7	WINCHES (See 35D4 also)	35D25-14	Gearbox
35D8	CRADLES	35D26	KITS
35D8-2	Afterburner	35D26-2	Aligning Fixture
35D8-3	Missile	35D26-3	Tiedown
35D8-4	Boom	35D26-4	Rigging
35D8-5	Wing Removal		
35D8-6	Bomb		
35D8-7	Radome		
35D8-8	Antenna		
35D8-9	Pod		
35D8-10	Re-Entry Vehicle		
35D8-11	Rocket Launcher		

35D26-5	Pressurizing	35DA7	INDICATOR, MISSILE POSITION AND ALIGNMENT
35D26-6	Leveling	35DA8	VALVES
35D26-7	Booster Pump	35DA9	FILTER ASSEMBLIES
35D26-8	Nose Radome	35DA10	GEAR REDUCER ASSEMBLIES
35D27	RAMPS	35DA11	GAUGES
35D27-2	Wheel Set	35DA12	METERS
35D28	PRIMING ASSEMBLIES	35DA13	CYLINDERS (See 35DA3-3 also)
35D28-2	Hydraulic Oil	35DA14	REGULATORS
35D29	CARTS	35DA15	DRIVE ASSEMBLIES
35D29-2	Missile Propellant	35DA16	CHASSIS
35D29-3	Hydraulic	35DA17	GUIDE ASSEMBLIES
35D29-4	Magnetron	35E	AIR AND MISSILE BASE UTILITY OPERATING EQUIPMENT
35D29-5	Liquid	35E1	FIRE FIGHTING EQUIPMENT
35D29-6	Lavatory Servicing	35E1-2	Fire Extinguisher
35D29-7	Refrigeration Servicing	35E2	LANDING MATS
35D29-8	Pneumatic	35E3	PREFABRICATED BUILDINGS
35D30	LOADERS	35E4	SHELTERS
35D30-2	Missile	35E5	TENTS
35D30-3	Aircraft	35E6	BRIDGES
35D30-4	Munitions	35E6-2	Pontoon
35D31	CARRIAGES	35E7	HEATERS
35D31-2	Re-Entry Vehicle	35E7-2	Aircraft Ground
35D31-3	Rocket Motor	35E7-3	Engine and Shelter
35D32	RINGS	35E7-4	Utility, Low Silhouette Heater
35D32-2	Engine Roll Over	35E7-5	Heat Exchanger
35D33	PALLETS	35E7-6	Space
35D33-2	Air Cargo	35E7-7	Gyro
35D34	PLATFORMS	35E8	BARRIERS
35D35	GUIDES	35E8-2	Runway
35D36	MAN LIFT DEVICES	35E8-3	Runup Fence
35D37	PROCESSORS	35E9	AIR-CONDITIONERS AND FREEZERS
35DA	ASSOCIATED EQUIPMENT AND COMPONENTS	35E10	GROUND COOLERS
35DA1	CABLEWAYS	35E11	GROUND BLOWERS AND FANS
35DA2	CONVEYORS	35E12	VENTILATORS
35DA3	TRUCKS, DOLLIES AND TRAILERS	35E13	PUMPS
35DA3-2	Bomb Truck	35E14	COMPRESSOR BUILDINGS
35DA3-3	Cylinder, Pump Assembly	35E15	MISSILE A AND M SHOPS, MAIN GROUND AIDS PENETRATION
35DA3-4	Motor, Actuator	35E16	ERECTORS
35DA3-5	Cylinder Assembly		
35DA3-6	Adapter		
35DA3-7	Thermostat		
35DA3-8	Blower		
35DA3-9	Power Pack		
35DA3-10	Cap		
35DA4	CONTROLS		
35DA5	RAIL ASSEMBLIES		
35DA6	ACTUATORS		

35E17	DECONTAMINATION EQUIPMENT, DEICERS	35E35	SANITATION EQUIPMENT
35E18	CONTROL EQUIPMENT	35E36	WARNING DEVICES
35E19	CASES (See 35E20 also)	35EA	ASSOCIATED EQUIPMENT
35E20	CONTAINERS, SHIPPING AND STORAGE	35EA1	NOZZLES
35E20-2	Missile, Warhead Section	35EA2	SPEED REDUCERS
35E20-3	Engine	35EA3	FIRE PROTECTION AND SAFETY SHELTERS
35E20-4	Miscellaneous	35EA4	AIR-CONDITIONING
35E20-5	Helicopter Blade	35EA4-2	Fan, Blower
35E20-6	Checkout Tape	35EA4-3	Valve
35E20-7	Optical Equipment	35EA4-4	Compressor
35E20-8	Chemical, Biological Munitions	35EA4-5	Field, Rotor Assembly
35E20-9	Guided Glide Weapon	35EA4-6	Tachometer
35E20-10	Dispenser	35EA4-7	Adapter, Duct
35E20-11	Ammunition	35EA4-8	Pump
35E21	COVERS	35EA4-9	Filler, Bleeder
35E21-2	Missile	35EA5	LAUNCHER SHELTER, HIGH- AND LOW-HELIUM
35E21-3	Aircraft	35EA5-2	Valve
35E21-4	Bomb	35EA5-3	Control-Indicator Assembly
35E21-5	Camera	35EA6	RIM BUILDING COMPONENTS
35E21-6	Scanner	35EA7	DECONTAMINATION SYSTEM
35E22	PURGING AND CLEANING EQUIPMENT	35EA7-2	Pump
35E22-2	Missile	35EA7-3	Valve
35E22-3	Aircraft	35EA7-4	Measuring, Controlling Instrument
35E22-4	Engine	35EA8	CONTROL BENCH UNITS
35E22-5	Trailer	35EA8-2	Pump
35E23	REGULATORS	35EA9	PURGING AND CLEANING EQUIPMENT
35E23-2	Missile	35EA9-2	Valve
35E24	LEAK DETECTOR	35EA9-3	Indicator
35E25	MISSILE SHIPPING EQUIPMENT	35F	AIR FIELD LIGHTING AND ELECTRICAL EQUIPMENT
35E26	PROTECTION EQUIPMENT	35F1	CABINETS
35E26-2	Engine Screen, Shield	35F2	CONTROL PANELS
35E26-3	Personnel Screen, Shield	35F3	CUBICLES
35E26-4	Insulation	35F4	LAMP CHANGERS
35E27	GAS AND UNDERGROUND PIPING SYSTEMS AND COMPONENTS	35F5	LIGHTS
35E27-2	System	35F5-2	Air Traffic Control
35E27-3	Valve	35F5-3	Approach and Runway
35E28	FILTERS AND DEHYDRATORS	35F5-4	Beacon
35E29	CONVERTERS	35F5-5	Flood
35E30	WINDOWS	35F5-6	Lantern
35E31	TANKS	35F5-7	Searchlight
35E31-2	Mixing	35F5-8	Range
35E31-3	Water Storage	35F5-9	Flashlight
35E32	SWITCHES	35F5-10	Marker
35E33	RELOAD FACILITIES	35F5-11	Launch
35E34	TOWERS	35F6	PANELBOARDS

35F7	REFLECTORS	35M4	MISSILE- AND COMPONENT- HANDLING EQUIPMENT
35F8	REGULATORS	35M4-2	Installation Fixture
35F9	RELAYS	35M4-3	Carrier
35F10	SIRENS	35M4-4	Loader
35F11	SWITCHBOARDS	35M4-5	Hydraulic Jack (Do not use - see 35A2)
35F12	WIND INDICATORS	35M5	SERVICERS
35F13	BATTERIES	35M5-2	Hydro-Pneumatic
35F14	SWITCHES	35M5-3	Hydraulic
35F15	ELECTRIC MOTORS	35M5-4	Pneumatic
35F16	STARTERS	35M5-5	Electric
35F17	FANS	35M6	RING ASSEMBLY AND EQUIPMENT
35F18	ELECTRIC POWER TRANSFER CONTROLS	35M6-2	Auxiliary Ring Assembly
35G	AIRCRAFT GROUND SUPPORT EQUIPMENT	35M6-3	Start Assembly
35G3	SUPPORT ASSEMBLIES	35M6-4	Filling Assembly
35G3-3	Stand	35M6-5	Control Assembly
35G5	KITS (HANDLING)	35M6-6	Cable Mast
35G5-2	Panel and Rack	35M7	PROPELLANT SERVICING UNITS
35G5-4	Gimbal Kit	35M7-2	Nitrogen
35M	MISSILE SUPPORT EQUIPMENT	35M7-3	Liquid Oxygen
35M1	SYSTEM TECHNICAL ORDERS	35M7-4	Solvent
35M1-2	Fluid Distribution	35M7-5	Gas
35M1-3	Propellant Utilization	35M7-6	Ammonia
35M1-4	Gas Distribution	35M7-7	Adapter
35M1-5	Silo Helium Charge	35M7-8	Hydraulic
35M1-6	Monorail	35M7-9	Freon
35M1-7	Crib Suspension	35M8	RECHARGING UNITS
35M1-8	Damper, Lock System	35M8-2	Nitrogen
35M1-9	Personnel Access	35M8-3	Oxygen
35M1-10	Environmental Control	35M8-4	Refrigerant
35M2	ERECTION EQUIPMENT	35M9	PRESSURIZING UNITS
35M2-2	Mount, Erector	35M9-2	Nitrogen
35M2-3	Hydraulic Pumping Unit	35M9-3	Canister
35M2-4	Trunnion Erector (Use 35M2-2)	35M10	CONTROL UNITS
35M2-5	Buffer Assembly	35M10-2	Nitrogen
35M2-6	Ratchet Assembly	35M10-3	Pressurization
35M3	LAUNCHING EQUIPMENT	35M10-4	Propellant
35M3-2	Launcher, Alignment Assembly	35M10-5	Temperature
35M3-3	Shock Absorber	35M10-6	Hydraulic, Pneumatic
35M3-4	Indicator	35M10-7	Silo
35M3-5	Adapter Unit	35M11	PANELS (PROPELLANT)
35M3-6	Boom	35M11-2	Nitrogen
35M3-7	Aligning	35M11-3	Liquid Oxygen
35M3-8	Support and Positioner	35M11-4	Ammonia
35M3-9	Pack	35M12	INDICATORS
35M3-10	Balancer	35M12-2	Dew Point
35M3-11	Rescue	35M13	REGULATORS
		35M13-2	Pressure
		35M14	VALVES
		35M14-2	Shutoff
		35M14-3	Vent, Relief

35M14-4	Regulator	35M27-3	Hydraulic
35M14-5	Control	35M27-4	Ballistic
35M14-6	Selector	35M28	DRIVES
35M14-7	Check	35M29	SWITCHES
35M14-8	Shuttle	35M30	MANIFOLD ASSEMBLIES
35M14-9	Relay	35M31	SPEED REDUCERS (GOVERNORS)
35M15	FILTERS AND STRAINERS	35M32	TRANSMISSIONS
35M15-2	Hydraulic	35M33	CONNECTORS
35M15-3	Pneumatic	35M34	TENSION DEVICES
35M15-4	Pressure	35M35	ADAPTERS AND CLAMPS
35M15-5	Liquid Oxygen	35M36	TUBES
35M16	SENSORS	35M37	DOORS
35M16-2	Liquid	35M38	SWIVEL AND GIMBAL ASSEMBLIES
35M16-3	Overspeed	35M39	VAPORIZERS THERMOCOUPLES
35M17	CYLINDERS	35MA	ASSOCIATED EQUIPMENT
35M17-2	Hydraulic	35MA1	HYDRAULIC SYSTEMS COMPONENTS
35M17-3	Actuating	35MA1-2	Valve
35M17-4	Pneumatic	35MA2	ERECTION EQUIPMENT
35M17-5	Mechanical	35MA2-2	(Not used)
35M18	MOTORS	35MA2-3	Hydraulic Cylinder, Accumulator
35M18-2	Electric	35MA3	LAUNCHING EQUIPMENT
35M18-3	Hydraulic	35MA3-2	Valve (See 35M14)
35M18-4	Pneumatic	35MA3-3	Hydraulic Cylinder (See 35M17)
35M19	PUMPS	35MA3-4	Hydraulic Accumulator (See 35M21)
35M19-2	Electric	35MA3-5	Motor (See 35M18)
35M19-3	Hydraulic	35MA3-6	Indicator (See 35M12)
35M19-4	Hand	35MA3-7	Pump (See 35M19)
35M19-5	Pneumatic	35MA3-8	Coupling
35M20	METERS AND MEASURING EQUIPMENT	35MA3-9	Control (See 35M10)
35M20-2	Meter	35MA3-10	Brake (See 35M23)
35M20-3	Indicator	35MA3-11	Joint Assembly
35M21	ACCUMULATORS	35MA4	PROPELLANT LOADING AND PRESSURIZATION
35M21-2	Hydraulic	35MA4-2	Regulator (See 35M13)
35M21-3	Pneumatic	35MA4-3	Valve (See 35M14)
35M21-4	Propulsion	35MA4-4	Breaker Assembly
35M22	BEARINGS	35MA4-5	Switch (See 35M29)
35M22-2	Flanged	35MA4-6	Indicator (See 35M12)
35M22-3	Spherical Roller	35MA4-7	Pressure Unit
35M22-4	Floating	35MA4-8	Relay
35M23	BRAKES	35MA4-9	Pump (See 35M19)
35M23-2	Hydraulic	35MA4-10	Starter
35M24	GAUGES	35MA4-11	Liquid Level
35M24-2	Pressure	35MA4-12	Gauge (See 35M24)
35M25	SURGE AND DESURGE EQUIPMENT	35MA4-13	Meter (See 35M20)
35M25-2	Hydraulic		
35M25-3	Pneumatic		
35M26	LOCK AND RELEASE ASSEMBLIES		
35M27	ACTUATORS		
35M27-2	Electro-Mechanical		

CHAPTER 27

CATEGORY 36 - VEHICLES, CONSTRUCTION AND MATERIAL-HANDLING EQUIPMENT

27-1 GENERAL.

27-1.1 Category 36 contains six systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore, TO numbers in Category 36 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 27-2.

27-1.2 TO data pertaining to more than one system is numbered in the category general series.

27-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

27-2 NUMBERING PATTERNS.

27-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within a system.

27-2.1.1 Part one is always the numeric 36 identifying Category 36.

27-2.1.2 Part two is an alpha character identifying one of six systems; i.e., A - vehicles; C - construction equipment; G - gas generating equipment; M - materials handling equipment; R - ordnance equipment; and Y - vehicle, construction and material-handling equipment. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., MA.

27-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 27-4.

27-2.2 GROUP TWO. TO numbering patterns in Category 36 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns.

27-2.2.1 If the TO number uses only three basic groups, group two will have one or more numeric characters representing the model, type or PN assigned to specific components.

27-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more numeric characters and the model, type or PN is identified in group three.

27-2.3 GROUP THREE.

27-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 36:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 5 DCSC Technical Maintenance Standards
- 6 Inspection Requirements
- 7 Installation Instructions

27-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 36:

- CL - Checklists
- LC - Lubrication Charts
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

27-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific components.

27-2.4 GROUP FOUR. When the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 27-2.3.1, above.

27-3 EXAMPLES OF CATEGORY 36 NUMBERING PATTERNS.

27-3.1 A service manual for a low bed semi-trailer, 25 ton, type T25L-232:

36A9-2-32-2

36	Category 36
A	Vehicles
9	Semi-Trailer Series
2	Cargo Type Subseries
32	Represents Type T25L-232
2	Number Reserved for Service Manuals

27-3.2 A field maintenance manual for a portable floor crane, model HLU-145A/E:

36C3-6-4-2

36	Category 36
C	Construction Equipment
3	Crane Series
6	Portable Type Subseries
4	Represents Model HLU-145A/E
2	Number Reserved for Field Maintenance Manuals

27-3.3 Operating instructions for a fork lift, model FK-7-1:

36M2-2-82-1

36	Category 36
M	Material Handling Equipment
2	Lift Series
2	Fork Lift Subseries
82	Represents Model FK-7-1
1	Number Reserved for Operating Instructions

27-4 CATEGORY 36 NUMBERING PATTERNS.

36 VEHICLES, CONSTRUCTION, AND MATERIAL-HANDLING EQUIPMENT

36A VEHICLES

36A1 AMBULANCES

36A2 COMMERCIAL FLEET

36A2-2 International

36A2-3 Ford

36A2-4 General Motors

36A2-5 Chrysler

36A2-6 American Motors

36A2-7 White Motors

36A2-8 Mack Truck, Inc.

36A2-9 VW

36A2-10 Kenworthy

36A3 BUSES

36A4 DOLLIES, TRAILERS

36A5 JEEPS

36A6 MOTORCYCLES

36A7 PASSENGER CARS

36A8 SCOOTERS

36A9 SEMITRAILERS

36A9-2 Cargo

36A9-3 Fuel Servicing

36A9-4 Laundry

36A9-5 Refrigerating

36A9-6 Shower

36A9-7 Stake and Platform

36A9-8 Van

36A9-9 Wrecking

36A9-10 Pilotless Aircraft Transport

36A9-11 Translauncher

36A9-12 Chemical Handling

36A9-13 Water Handling

36A10 TRACTORS

36A10-2 Tracklaying

36A10-3 Wheeled

36A11 TRAILERS

36A11-2 Ammunition

36A11-3 Antenna Mount

36A11-4 Bomb

36A11-5 Cargo

36A11-6 Chemical Handling

36A11-7 Clothing Repair

36A11-8 Firefighting

36A11-9 (Not used)

36A11-10 Fuel Servicing

36A11-11 Gas Plant

36A11-12 Laundry

36A11-13 Lubrication

36A11-14 Shoe Repair

36A11-15 Shower

36A11-16 Telephone Maintenance

36A11-17 Textile Repair

36A11-18 Utility

36A11-19 Van

36A11-20 Water Tank

36A11-21 Electronic Equipment, Enclosure Trailer

36A11-22 Photographic Equipment

36A11-23 Bolster

36A11-24 Pilotless Aircraft

36A11-25 Test Equipment

36A11-26 Water-Alcohol Tank

36A11-27 Radar Equipment, Radio Equipment

36A11-28 Heater

36A11-29 Housetrailer

36A12 TRUCKS

36A12-1A 1/4-Ton - 2-Ton

36A12-1B	2 1/2-Ton	36C7	DRILLS
36A12-1C	4-Ton and Over	36C8	DRYERS AND DEHYDRATORS
36A12-2	Amphibian	36C9	GRADERS
36A12-3	Bomb Service	36C9-2	Self-Propelled
36A12-4	Bridge Erecting	36C9-3	Towed
36A12-5	Cargo	36C10	HEATERS
36A12-6	Carryall	36C11	KETTLES
36A12-7	Chemical Service	36C12	LOADERS
36A12-8	Crash, Fire and Rescue	36C12-2	Crawler Mounted
36A12-9	Decontaminating	36C12-3	Wheel Mounted
36A12-10	Dump	36C13	CABLE LAYING EQUIPMENT
36A12-11	Field Lighting	36C13-2	Lashing Machine
36A12-12	Firefighting	36C13-3	Reeling Machine
36A12-13	Fuel, Oil Servicing	36C13-4	Cable Transporter
36A12-14	Pickup	36C14	MIXERS
36A12-15	Prime Mover	36C14-2	Bituminous Material
36A12-16	Refuse Collection	36C14-3	Concrete
36A12-17	Shop	36C14-4	Soil
36A12-18	Stake and Platform	36C15	PAVERS AND FINISHERS
36A12-19	Telephone Maintenance	36C15-2	Bituminous Material
36A12-20	Weapon Carrier	36C15-3	Concrete
36A12-21	Wrecking	36C16	PIPE LAYERS
36A12-22	Crane	36C17	PLANTS
36A12-23	Waste, Water	36C17-2	Asphalt Mixing
36A12-24	Multipurpose	36C17-3	Batching
36A12-25	Marker, Traffic Line	36C17-4	Concrete Mixing
36A12-26	Liquid Nitrogen	36C17-5	Crushing, Screening and Washing
36A12-27	Refrigerating	36C17-6	Steam Construction
36A13	TRUCK TRACTORS	36C18	PLOWS, SNOW PLOWS
36A14	ARMORED	36C19	PUMPS
36C	CONSTRUCTION EQUIPMENT	36C20	ROLLERS
36C1	AUGERS	36C20-2	Self-Propelled
36C1-2	Skid Mounted	36C20-3	Towed
36C1-3	Tractor Mounted	36C21	ROOTERS
36C1-4	Trailer Mounted	36C22	SCRAPERS
36C1-5	Truck Mounted	36C22-2	Self-Propelled
36C2	CONVEYORS	36C22-3	Towed
36C2-2	Crawler Mounted	36C23	SHOVELS
36C2-3	Self-Propelled	36C23-2	Crawler Mounted
36C2-4	Skid Mounted	36C23-3	Truck Mounted
36C2-5	Wheel Mounted	36C23-4	Wheeled
36C3	CRANES	36C24	SPREADERS
36C3-2	Crawler Mounted	36C25	SWEEPERS
36C3-3	Tractor Mounted	36C25-2	Self-Propelled
36C3-4	Truck Mounted	36C25-3	Towed
36C3-5	Wheel Mounted	36C25-4	Magnetic
36C3-6	Portable	36C25-5	Manually Propelled
36C3-7	Floating (Use 39B)	36C26	TRACTORS
36C4	DERRICKS (Used on Diesel Engine)		
36C5	DISTRIBUTORS		
36C5-2	Bituminous Material		
36C5-3	Water		
36C6	DITCHERS		

36C26-2	Crawler	36M7	WHEELBARROWS
36C26-3	Wheeled	36MA	ASSOCIATED EQUIPMENT
36C27	TRAILERS	36MA1	STACKERS (FORK LIFT)
36C28	WAGONS	36MA2	ELEVATORS
36C29	WELL DRILLERS	36R	ORDNANCE EQUIPMENT
36C30	PILE DRIVERS	36R1	(Not used)
36C30-2	Telescoping	36R2	ARMORED CARS
36C31	MOTORIZED COMPRESSORS	36R3	CARRIAGES
36C31-2	Wheeled	36R4	CARRIERS
36C32	CARRIERS	36R4-2	Cargo
36C32-2	Snow Plow	36Y	COMPONENTS - VEHICLES, CONSTRUCTION, AND MATERIAL HANDLING EQUIPMENT
36C32-3	Crane-Shovel	36Y1	ANGLED OZERS
36C33	COLLECTORS	36Y2	ATTACHMENTS
36C33-2	Dust	36Y2-2	Auger
36C34	COMPACTORS AND VIBRATORS	36Y2-3	Magnet
36C34-2	Pneumatic, Gasoline Engine Driven	36Y2-4	Shovel
36C35	CLEANING MACHINES	36Y2-5	Snow Plow
36C36	RIPPERS AND PAVING BREAKERS, JACK-HAMMERS	36Y2-6	Sweeper
36C37	EXCAVATORS	36Y3	AXLES, WHEEL ASSEMBLIES, BRAKE ASSEMBLIES
36C37-2	Multipurpose	36Y4	BATTERIES AND BATTERY CABLES
36G	GAS GENERATING EQUIPMENT	36Y5	BINS
36G1	GENERATING AND CHARGING PLANTS	36Y6	BODIES
36G1-2	Generating Plant, Oxygen or Nitrogen	36Y6-2	Bus
36G1-3	Hydrogen Generator	36Y6-3	Dump
36G2	FILTER ASSEMBLIES	36Y6-4	Fire Truck
36M	MATERIAL-HANDLING EQUIPMENT	36Y6-5	Lift
36M1	CRANES	36Y6-6	Passenger Car
36M1-2	Electrically Driven	36Y6-7	Refuse Collection
36M1-3	Engine Driven	36Y6-8	Conveyor Delivery
36M2	LIFTS	36Y6-9	Ambulance
36M2-2	Fork	36Y6-10	Van
36M2-3	Platform	36Y7	BRAKES
36M2-4	Scoop	36Y8	BUCKETS
36M3	TRACTORS	36Y9	BULLDOZERS
36M3-2	Electrically Driven	36Y10	CHASSIS
36M3-3	Engine Driven	36Y11	CLUTCHES
36M4	TRAILERS	36Y12	FEEDERS
36M5	TRUCKS	36Y13	GAUGES AND INSTRUMENTS
36M5-2	Straddle	36Y14	GRADATION UNIT
36M5-3	Wheel Type	36Y15	HEATERS
36M5-4	Liftainer		
36M5-5	Fixed Platform		
36M6	POSITIONERS		
36M6-2	Pallet		

36Y16	HOISTS	36Y35	WINCHES
36Y17	KITS	36Y36	WINDSHIELDS
36Y17-2	Cold Starting	36Y37	ROPES
36Y17-3	Follow-me	36Y37-2	Wire Rope
36Y17-4	Hard Top Closure	36Y38	CUBICLES
36Y17-5	Personnel Heater	36Y38-2	Power Distribution
36Y17-6	Power Plant	36Y39	TRACKS
36Y17-7	Winterization	36Y39-2	Rubber
36Y17-8	Brake Control	36Y40	FILTERS
36Y17-9	Fire Protection	36Y40-2	Fluid
36Y17-10	Conveyor	36Y41	PACKS
36Y18	LIGHTS	36Y42	BELTS AND PULLEYS
36Y18-2	Flood	36Y43	SPACERS
36Y18-3	Instrument	36Y44	CARRIAGES
36Y18-4	Clearance	36Y45	REELS
36Y18-5	Vehicle	36Y46	ACTUATORS
36Y19	MOTORS	36Y47	CONTROLS
36Y20	METERS	36Y48	BOGIES
36Y21	MOWERS	36Y49	CYLINDER ASSEMBLIES
36Y22	POWER CONTROL UNITS	36Y50	VALVES
36Y23	POWER TRAINS	36Y51	PIPELINES (Use 37C)
36Y24	PROPORTIONERS (VARIABLE FLOW)	36Y52	BLADES
36Y25	PUMPS	36Y53	BLOWERS
36Y26	RADIATORS	36Y54	SEPARATORS
36Y27	SAWS	36Y55	COMPRESSORS
36Y28	SEGREGATORS	36Y56	SHOCKS (Use 36Y29)
36Y29	SHOCK ABSORBERS	36Y57	LANDING JACKS
36Y30	SPRINGS	36Y58	AIR COMPRESSORS
36Y31	TANKS	36Y59	VEHICLE ONLOADING EQUIPMENT
36Y31-2	Asphalt	36Y60	STEERING GEARS
36Y31-3	Fuel	36Y61	CARBURETORS
36Y31-4	Vehicular		
36Y31-5	Water		
36Y32	TIRES AND TUBES		
36Y32-2	Safety Guard		
36Y33	TRANSMISSIONS		
36Y34	WHEELS		

CHAPTER 28

CATEGORY 37 - FUEL-, OIL- AND PROPELLANT-HANDLING EQUIPMENT

28-1 GENERAL.

28-1.1 Category 37 contains three fuel-, oil-, and propellant-handling systems. These systems are divided into equipment series and most of the systems are further divided into equipment subseries within each equipment series. Therefore TO numbers in Category 37 use both three and four basic groups for data identification. Numbering patterns for both forms are discussed in paragraph 28-2.

28-1.2 TO data pertaining to more than one system is numbered in the category general series.

28-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

28-2 NUMBERING PATTERNS.

28-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series within the system.

28-2.1.1 Part one is always the numeric 37 identifying Category 37.

28-2.1.2 Part two is an alpha character identifying the oil-, fuel-, and propellant-handling systems, i.e., A - fuel and oil handling equipment; B - aircraft propellant systems; and C - propellant storage and handling equipment. Associated equipment for these systems is identified by adding the alpha A immediately following the system identifier, e.g., CA.

28-2.1.3 Part three contains one or more numeric characters identifying an equipment series within a system. The TO numbering series are outlined in paragraph 28-4.

28-2.2 GROUP TWO. TO numbering patterns in Category 37 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

28-2.2.1 If the TO number uses only three basic groups, group two uses one or more numeric characters representing the model, type or PN assigned to specific components.

28-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, group two identifies the equipment subseries with one or more

numeric characters and the model, type or PN is identified in group three.

28-2.3 GROUP THREE.

28-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 37:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions

28-2.3.2 In some instances the reserved numbers in group three are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 37:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

28-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing model, type or PN assigned to specific components.

28-2.4 GROUP FOUR. If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 28-2.3.1, above.

28-3 EXAMPLES OF CATEGORY 37 NUMBERING PATTERNS.

28-3.1 Overhaul instructions for a fuel hose four-wheel trailer type MH-1:

37A2-2-2-3	Category 37
37	Fuel- and Oil- Handling
A	Equipment
2	Cart Series
2	Hose Cart Subseries
2	Represents Type MH-1
3	Number Reserved for Overhaul Instructions

28-3.2 An illustrated parts breakdown for a fuel and oil servicing nozzle, PN 9035:

37A6-2-24

37 Category 37
A Fuel- and Oil- Handling Equipment
6 Nozzle Series
2 Represents PN 9035
24 Number Reserved for Illustrated Parts Breakdown

28-3.3 An illustrated parts breakdown for a fuel storage tank, model TMU-4/E:

37C2-2-2-4

37 Category 37
C Propellant Storage and Handling
2 Storage Facility Series
2 Fuel Storage Subseries
2 Represents Model TMU-4/E
4 Number Reserved for Illustrated Parts Breakdown

28-4 CATEGORY 37 NUMBERING SERIES.

37 FUEL-, OIL- AND PROPELLANT-HANDLING EQUIPMENT
37A FUEL- AND OIL- HANDLING EQUIPMENT
37A1 ADAPTERS
37A2 CARTS
37A2-2 Hose
37A3 CONTAINERS
37A3-2 Collapsible
37A3-3 Skid Mounted
37A4 COUPLINGS
37A5 HOSES
37A6 NOZZLES
37A6-2 Single Point
37A6-3 Automatic Shutoff
37A6-4 Over-the-Wing (Gravity)
37A7 PUMPS
37A8 SEPARATORS
37A8-2 Gasoline-Water
37A9 FUEL STORAGE, DISTRIBUTING AND DISPENSING SYSTEMS
37A9-2 Gravity Flow
37A9-3 Hydrant Fueling
37A9-4 Hydraulically Operated

37A9-5 Mechanical
(Other than hydrant)
37A9-6 Fuel Dispensing Line
37A9-7 Fuel Distributing Unit
37A10 OIL STORAGE, DISTRIBUTING, AND DISPENSING SYSTEMS
37A11 REFUELING UNITS
37A12 TANKS
37A13 TRANSFER UNITS
37A14 VEHICLE FUEL AND OIL DISTRIBUTING AND DISPENSING SYSTEMS
37A15 OIL PURIFIERS
37A16 FUEL RETURN LINE ASSEMBLIES
37A17 SERVICING UNITS
37A17-2 Oil Servicing
37A17-3 Coolant Servicing
37A18 VALVES (Use 37A1)
37A18-2 Fuel Servicing
37A19 REELS
37B AIRCRAFT PROPELLANT SYSTEMS
37B1 NITRIC ACID HANDLING EQUIPMENT
37C PROPELLANT STORAGE AND HANDLING SYSTEMS
37C1 SYSTEMS
37C1-2 Acid
37C1-3 Fuel
37C2 STORAGE FACILITIES
37C2-2 Fuel
37C2-3 High Pressure Gas
37C2-4 Liquid Oxygen
37C2-5 Diesel Fuel
37C2-6 Nitrogen
37C2-7 Liquid Solvent Recovery
37C2-8 Liquid Oxygen, Nitrogen, Argon, and Air
37C3 MISSILE PROPELLANT PILE LINES
37C4 MISSILE PROPELLANT HOSE ASSEMBLIES
37C5 PUMPS
37C6 FILTERING UNITS
37C7 HEATERS
37C8 COMPRESSORS, PROPELLANT-TRANSFER

37C9	CLEANING AND PURGING EQUIPMENT
37C10	CONNECTORS
37C11	GAUGES
37CA	ASSOCIATED EQUIPMENT
37CA1	PROPELLANT TRANSFER
37CA1-2	Valve
37CA1-3	Breather Set

CHAPTER 29

CATEGORY 38 - NONAERONAUTICAL ENGINES

29-1 GENERAL.

29-1.1 Category 38 contains four systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in Category 38 use both three and four basic groups in the numbering patterns discussed in paragraph 29-2, below.

29-1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

29-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

29-2 NUMBERING PATTERNS.

29-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

29-2.1.1 Part one is always the numeric 38 identifying Category 38.

29-2.1.2 Part two is an alpha character identifying the nonaeronautical engine, i.e., G - powered ground equipment engines; M - marine engines; V - vehicle engines; and X - nonaeronautical engine components and accessories.

29-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The equipment series numbers for this category are outlined in paragraph 29-4.

29-2.2 **GROUP TWO.** TO numbering patterns in Category 38 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

29-2.2.1 If the TO number uses only three basic groups, group two will contain one or more numeric characters representing the model, type or PN assigned to specific equipment.

29-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

29-2.3 **GROUP THREE.**

29-2.3.1 If a TO number has only three basic groups, the third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 38:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

29-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 38:

- CL - Checklists
- LC - Lubrication Charts
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

29-2.3.3 If the TO number has four basic groups, the third group contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

29-2.4 **GROUP FOUR.** If the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 29-2.3.1, above.

29-3 EXAMPLES OF CATEGORY 38 NUMBERING PATTERNS.

29-3.1 Illustrated parts breakdown for a diesel engine, model D-318.

38G1-24-24	
38	Category 38
G	Powered Ground Equipment Engines
1	Diesel Series
24	Represents Model D-318
24	Number Reserved for Illustrated Parts Breakdown

29-3.2 Operating instructions for a Diesel marine engine, model 6DCMR-1879.

38M1-24-1

38 Category 38
M Marine Engines
1 Diesel Series
24 Represents Model 6DCMR-1879
1 Number Reserved for Operating Instructions

29-3.3 Overhaul manual for a fuel pump, PN 1539900 series:

38X11-2-4-3

38 Category 38
X Accessories
11 Pump Series
2 Fuel Pump Subseries
4 Represents PN 1539900 Series
3 Number Reserved for Overhaul Instructions

29-4 CATEGORY 38 NUMBERING SERIES.

38 NONAERONAUTICAL ENGINES
38G POWERED GROUND EQUIPMENT ENGINES
38G1 DIESEL
38G2 GASOLINE
38G3 JET FUEL
38M MARINE ENGINES
38M1 DIESEL
38M2 GASOLINE
38M3 STEAM
38V VEHICLE ENGINES
38V1 DIESEL
38V2 GASOLINE
38X NONAERONAUTICAL ENGINE COMPONENTS AND ACCESSORIES
38X1 BEARINGS

38X2 CARBURETORS
38X3 DISTRIBUTORS
38X4 FILTERS
38X4-2 Fuel
38X4-3 Oil
38X5 GEARS
38X6 GENERATORS
38X7 GOVERNORS
38X8 HOUSINGS
38X8-2 Clutch
38X9 MAGNETOS
38X10 PULLEYS
38X11 PUMPS
38X11-2 Fuel
38X11-3 Oil
38X11-4 Water
38X12 RADIATORS
38X13 SPARK PLUGS
38X14 STARTERS
38X15 THERMOSTATS
38X16 VALVES
38X17 SHIPPING CASES
38X18 SHAFTS
38X19 BUSHINGS
38X19-2 Bronze
38X20 IGNITION SYSTEMS
38X21 REGULATORS, CURRENT AND VOLTAGE
38X22 HEATERS
38X23 SWITCHES
38X24 INJECTORS
38X25 AIR EQUIPMENT
38X26 TURBOCHARGERS
38X27 FAN DRIVES

CHAPTER 30

CATEGORY 39 - WATERCRAFT EQUIPMENT

30-1 GENERAL.

30-1.1 Category 39 contains five watercraft systems. The TO numbers in this category use three basic groups for data identification. The numbering pattern is discussed in paragraph 30-2, below.

30-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

30-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

30-2 NUMBERING PATTERNS.

30-2.1 **GROUP ONE.** The five systems that identify types of watercraft use only two parts in group one to identify the category and type of watercraft.

30-2.1.1 Part one is always the numeric 39 identifying Category 39.

30-2.1.2 Part two is a single alpha character identifying the various systems of watercraft, i.e., C - cargo boats; P - personnel boats; R - range patrol boats; and V - vessels. The one exception is the tugboat system identified with the two alpha characters TG.

30-2.2 **GROUP TWO.** TO numbering pattern in Category 39 uses three basic groups. Group two has one or more numeric characters representing the model, type or PN assigned to specific components.

30-2.3 **GROUP THREE.**

30-2.3.1 The third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category.

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 5 Equipment Allowance Lists
- 6 Inspection Requirements

30-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha

characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in this category.

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

30-3 EXAMPLES OF NUMBERING PATTERNS USED IN CATEGORY 39.

30-3.1 An operating and maintenance instruction for a mechanized landing craft, type LCM 8:

39C-47-1	
39	Category 39
C	Cargo Boats
47	Represents Type LCM 8
1	Number Reserved for Operating Instructions

30-3.2 Maintenance instructions for a 21-foot aluminum tow-rescue boat, type P-21:

39P-21-2	
39	Category 39
P	Personnel Boats
21	Represents Type P-21
2	Number Reserved for Maintenance Instructions

30-3.3 Equipment allowance list for a 24-foot USAF rescue boat, type R-4:

39R-4-5	
39	Category 39
R	Range Patrol Boats
4	Represents Type R-4
5	Number Reserved for Equipment Allowance List

30-4 CATEGORY 39 NUMBERING SERIES.

39	WATERCRAFT EQUIPMENT
39C	CARGO BOATS
39P	PERSONNEL BOATS
39R	RANGE PATROL BOATS
39TG	TUGBOATS
39V	VESSELS

CHAPTER 31

CATEGORY 40 - COMMERCIAL AIR-CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING AND WATER TREATING EQUIPMENT

31-1 GENERAL.

31-1.1 Category 40 contains six systems. These systems are divided into equipment series and most of the equipment series are further divided into equipment subseries. Therefore TO numbers in this category use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 31-2.

31-1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

31-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

31-2 NUMBERING PATTERNS.

31-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

31-2.1.1 Part one is always the numeric 40 identifying Category 40.

31-2.1.2 Part two is an alpha character identifying the various systems, i.e., A - air-conditioners; H - heating equipment; P - plumbing equipment; R - refrigeration equipment; V - ventilating equipment; and W - water treating equipment.

31-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category are outlined in paragraph 31-4.

31-2.2 **GROUP TWO.** TO numbering patterns in Category 40 use both three and four groups; therefore, the identifiers in group two are not constant. The following describes both numbering patterns:

31-2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

31-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

31-2.3 **GROUP THREE.**

31-2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions

31-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 40:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

31-2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

31-2.4 **GROUP FOUR.** In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs described in paragraph 31-2.3.1, above.

31-3 EXAMPLES OF CATEGORY 40 NUMBERING PATTERNS.

31-3.1 Operating instructions with illustrated parts breakdown for air-conditioner, type MA-5:

40A1-6-10-1	
40	Category 40
A	Air-Conditioning Equipment
1	Air-Conditioner Series
6	Trailer Mounted Subseries
10	Represents Type MA-5
1	Number Reserved for Operating Instructions

31-3.2 A maintenance manual for a portable shower, model M1958:

40P1-2-2-2

40	Category 40
P	Plumbing Equipment
1	Bath and Shower Unit Series
2	Eight Shower Head Subseries
2	Represents Model M1958
2	Number Reserved for Maintenance Manuals

31-4 CATEGORY 40 NUMBERING SERIES.

40	COMMERCIAL AIR- CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING, AND WATER TREATING EQUIPMENT
40A	AIR-CONDITIONING EQUIPMENT
40A1	AIR-CONDITIONERS
40A1-2	Aircraft, Ground
40A1-3	Base Mounted
40A1-4	Self-Contained
40A1-5	Skid Mounted
40A1-6	Trailer Mounted
40A1-7	Pack
40A2	DEHUMIDIFIERS
40A2-2	Chemical
40A2-3	Mechanical
40A2-4	Electrical
40A3	COLLECTORS
40A3-2	Dust
40H	HEATING EQUIPMENT
40H1	BOILERS
40H2	FURNACES
40H3	HEATERS
40H3-2	(Not used)
40H3-3	(Not used)
40H3-4	Immersion
40H3-5	Space
40H3-6	(Not used)
40H3-7	Water
40P	PLUMBING EQUIPMENT
40P1	BATH AND SHOWER UNITS
40P1-2	8-Shower Head
40P1-3	12-Shower Head
40P1-4	24-Shower Head
40P1-5	32-Shower Head
40P1-6	Multi Shower Head

40P2	PUMPS
40P2-2	Centrifugal
40P2-3	Diaphragm
40P2-4	Helical Rotor
40P2-5	Pneumatic
40P2-6	Reciprocating
40P2-7	Rotary
40P2-8	Turbine
40P2-9	Steam Driven
40R	REFRIGERATING EQUIPMENT
40R1	COMPRESSORS
40R2	CONDENSING UNITS
40R3	COOLERS
40R3-2	Aircraft, Ground
40R3-3	Rivet
40R3-4	Unit
40R3-5	Water
40R3-6	Semi-Trailer Mounted
40R4	DISPLAY CASES
40R5	ICE CREAM PLANTS
40R6	ICE MAKERS
40R7	REFRIGERATORS
40R7-2	Film Processing
40R7-3	Household
40R7-4	Industrial
40R7-5	Reach-In
40R7-6	Walk-In
40R8	SODA FOUNTAIN EQUIPMENT
40V	VENTILATING EQUIPMENT
40V1	BLOWERS
40V2	FANS
40V2-2	Pedestal
40V2-3	Centrifugal
40V2-4	Axial
40V2-5	Propeller
40V3	VENTILATORS
40W	WATER TREATING EQUIPMENT
40W1	DEMINERALIZERS
40W2	DISTILLATION EQUIPMENT
40W3	HYPOCHLORINATION EQUIPMENT
40W4	PURIFICATION EQUIPMENT
40W5	SOFTENING EQUIPMENT
40W6	FILTERING EQUIPMENT

CHAPTER 32

CATEGORY 41 - SUBSISTENCE AND FOOD SERVICE EQUIPMENT

32-1 GENERAL.

32-1.1 Category 41 contains two subsistence and food service systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in category 41 use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 32-2, below.

32-1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

32-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

32-2 NUMBERING PATTERNS.

32-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

32-2.1.1 Part one is always the numeric 41 identifying Category 41.

32-2.1.2 Part two is an alpha character identifying the two systems in the category, i.e., A - subsistence; and B - food service equipment.

32-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The series for this category are outlined in paragraph 32-4.

32-2.2 **GROUP TWO.** TO numbering patterns in Category 41 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

32-2.2.1 If only three basic groups are used in a numbering pattern, group two will contain one or more numeric characters representing the model, type or PN assigned to specific equipment.

32-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

32-2.3 **GROUP THREE.**

32-2.3.1 If a TO number has only three groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown

32-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 41:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

32-2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

32-2.4 **GROUP FOUR.** In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs described in paragraph 32-2.3.1, above.

32-3 EXAMPLES OF CATEGORY 41 NUMBERING PATTERNS.

32-3.1 Illustrated parts breakdown for a food warming oven, type II, applicable to KC-135:

41B1-7-5-4	
41	Category 41
B	Food Service Equipment
1	Baking Equipment Series
7	Oven Subseries
5	Represents Type II
4	Number Reserved for Illustrated Parts Breakdown

32-3.2 Operating instructions for Peters-Dalton dishwashing machine, model HWC-80:

41B2-2-2-1

41 Category 41
 B Food Service Equipment
 2 Cleaning and Sanitation
 Equipment Series
 2 Dishwashing Machine Subseries
 2 Represents Model HWC-80
 1 Number Reserved for Operating Instructions

32-4 CATEGORY 41 NUMBERING SERIES.

41 SUBSISTENCE AND FOOD SERVICE EQUIPMENT
 41A SUBSISTENCE
 41A1 BEVERAGES
 41A2 DAIRY PRODUCTS
 41A3 DRIED FOODS
 41A4 FIELD AND COMBAT RATIONS
 41A5 FROZEN FOODS
 41A6 MEAT AND MEAT PRODUCTS
 41A7 PROCESSED FOODS
 41A8 TROPICAL PLANTS
 41B FOOD SERVICE EQUIPMENT

41B1 BAKING EQUIPMENT
 41B1-2 Doughnut Machine
 41B1-3 Dough Divider
 41B1-4 Dough Mixer
 41B1-5 Dough Proofer
 41B1-6 Fermentation Cabinet
 41B1-7 Oven
 41B1-8 Sifter
 41B2 CLEANING AND SANITATION EQUIPMENT
 41B2-2 Dishwasher
 41B3 COOKING EQUIPMENT
 41B3-2 Broiler
 41B3-3 Cooker
 41B3-4 Fryer
 41B3-5 Griddle
 41B3-6 Range
 41B3-7 Stove
 41B3-8 Toaster
 41B3-9 Warmer
 41B3-10 Urn
 41B4 PREPARATION EQUIPMENT
 41B4-2 Grinder
 41B4-3 Meat Cutter
 41B4-4 Mixer
 41B4-5 Peeler
 41B5 TESTING AND SCREENING EQUIPMENT

CHAPTER 33

CATEGORY 42 - COATING, CLEANING AND SEALING COMPOUNDS AND FUELS, GASES, LUBRICANTS, CHEMICALS AND MATERIALS

33-1 GENERAL.

33-1.1 Category 42 contains seven systems divided into equipment or material series. The series, in some instances, are further divided into material types. TO numbers in Category 42 use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 33-2, below.

33-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

33-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

33-2 NUMBERING PATTERNS.

33-2.1 **GROUP ONE.** This group has three parts identifying the category, system and material series.

33-2.1.1 Part one is always the numeric 42 identifying Category 42.

33-2.1.2 Part two is an alpha character identifying the various systems, i.e., A - dopes, paints, and cleaning compounds; B - fuels, lubricants, oxygen, and gases; C - chemicals; D - metals, plastics, and composition materials; E - rubber materials; F - cordage, leather, and miscellaneous fabric; and L - lumber.

33-2.1.3 Part three contains one or more numeric characters identifying the material series within a system. The material series numbers for this category are outlined in paragraph 33-4.

33-2.2 **GROUP TWO.** Since TO numbering patterns in Category 42 use both three and four basic groups, the identifiers in group two are not constant. The following describes both numbering patterns:

33-2.2.1 If the TO number uses only three basic groups, group two will have a numeric character

identifying all TOs as being in a single, general Model-Type-Part Number series. This is due to the general or comprehensive nature of TO data in this category.

33-2.2.2 If the TO number contains four basic groups, the equipment or material series identified in part three of group one has been further divided into subseries. In this case, group two identifies the specific material subseries with one or more numeric characters.

33-2.3 **GROUP THREE.**

33-2.3.1 If the TO number has only three groups, the third group of the numbering pattern is made up of numeric characters identifying individual TOs. Specific numbers are not reserved to identify specific types of TOs as in other categories. In some instances the numeric characters are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 42.

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

33-2.3.2 If the TO number has four basic groups, the third group contains a numeric character identifying all TOs as being in a single general Model-Type-Part Number series. This is due to the general or comprehensive nature of TO data in this category.

33-2.4 **GROUP FOUR.** When the TO number has four basic groups, the fourth group is made up of numeric characters identifying individual TOs. Specific numbers are not reserved to identify specific types of TOs as in other categories. In some instances the numeric characters may be followed by one or more alpha characters described in paragraph 33-2.3.1, above.

33-3 EXAMPLES OF CATEGORY 42 NUMBERING PATTERNS.

33-3.1 Manual on fluids for hydraulic equipment:

42B2-1-3

42	Category 42
B	Fuels, Lubricants, Oxygen and Gases
2	Oil Series
1	General Model-Type-Part Number Series
3	Third Manual in a Series

33-3.2 Manual on aircraft hoses:

42E1-1-1

42	Category 42
E	Rubber Materials
1	Aircraft Hose Series
1	General Model-Type-Part Number Series
1	First Manual in a Series

33-3.3 Manual on quality control of nitrogen propellant pressurizing agent:

42B7-3-1-1

42	Category 42
B	Fuels, Lubricants, Oxygen, and Gases
7	High Energy Liquid Propellants
3	Propellant Pressurization
1	General Model-Type-Part Number Series
1	First Manual in a Series

33-4 CATEGORY 42 NUMBERING SERIES.

42	COATING, CLEANING, AND SEALING COMPOUNDS AND FUELS, GASES, LUBRICANTS, CHEMICALS, AND MATERIALS
42A	DOPES, PAINTS, AND CLEANING COMPOUNDS

42A1	CLEANING COMPOUNDS
42A2	DOPES AND PAINTS
42A3	GLUES AND CEMENTS
42B	FUELS, LUBRICANTS, OXYGEN, AND GASES
42B1	FUELS
42B2	OILS
42B3	GREASES
42B4	COMPRESSED GASES
42B5	GAS STORAGE AND SERVICING CYLINDERS
42B6	LIQUID OXYGEN
42B7	HIGH ENERGY LIQUID PROPELLANTS
42B7-2	JP-4 - General
42B7-3	Propellant Pressurization - General
42C	CHEMICALS
42C1	ENGINE
42C2	METAL TREATMENT
42D	METALS, PLASTICS, AND COMPOSITION MATERIALS
42D1	ALUMINUM ALLOYS
42D2	COMPOSITION MATERIALS
42D3	MAGNESIUM ALLOYS
42D4	PLASTICS
42D5	STEEL
42E	RUBBER MATERIALS
42E1	AIRCRAFT HOSE
42E2	RUBBER SEALS AND PACKING
42F	CORDAGE, LEATHER, AND MISCELLANEOUS FABRIC
42L	LUMBER

CHAPTER 34

CATEGORY 43 - SIMULATOR AND TRAINING DEVICES

34-1 GENERAL.

34-1.1 Category 43 contains three simulator and training systems. These systems are divided into equipment series and most of the equipment series are further divided into equipment subseries. TO numbers in Category 43 use both three and four basic groups in the numbering pattern for data identification. The numbering patterns for both forms are discussed in paragraph 34-2, below.

34-1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

34-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

34-2 NUMBERING PATTERNS.

34-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

34-2.1.1 Part one is always the numeric 43 identifying Category 43.

34-2.1.2 Part two is an alpha character identifying the simulator and training systems, i.e., D - training devices; E - training equipment; and X - components. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., DA, EA.

34-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 34-4.

34-2.2 **GROUP TWO.** TO numbering patterns in Category 43 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

34-2.2.1 If only three basic groups are used in the numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

34-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment

subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

34-2.3 **GROUP THREE.**

34-2.3.1 If a TO number has only three groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category.

- 01 List of Applicable Publications (LOAP)
- 06 Work Unit Code Manuals
- 07 thru -09 Reserved
- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions and Installation Test Procedures
- 8 Test Procedures, Checkout Manuals, or Programmed Tests
- 9 Alignment Manuals

34-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 43:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

34-2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

34-2.4 **GROUP FOUR.** In those cases where the TO number has four basic groups, the fourth group identifies specific types of TOs described in paragraph 34-2.3.1, above.

34-3 EXAMPLES OF CATEGORY 43 NUMBERING PATTERNS.

34-3.1 Operating instructions for a mission simulator system, F-111 aircraft:

43D3-4-11-11
 43 Category 43
 D Training Devices
 3 Flight Simulator Series
 4 Fighter Aircraft Simulator Subseries
 11 Represents Model F-111 Aircraft
 11 Number Reserved for Operating Instructions

34-3.2 Operating instructions for a resident trainer and mobile training set, C-5A aircraft:

43E24-2-7-1
 43 Category 43
 E Training Equipment
 24 Mobile Trainer Series
 2 Cargo Aircraft Simulator Subseries
 7 Represents Model C-5 Aircraft
 1 Number Reserved for Operating Instructions

34-3.3 Overhaul instructions with illustrated parts breakdown for a turbine outlet temperature indicator, PN D06G0015-1:

43X5-23-2-3
 43 Category 43
 X Simulator Components
 5 Indicator Series
 23 Temperature Indicator Subseries
 2 Represents PN D06G0015-1
 3 Number Reserved for Overhaul Instructions

34-4 CATEGORY 43 NUMBERING SERIES.

43 SIMULATOR AND TRAINING DEVICES
 43D TRAINING DEVICES
 43D1 BOMBING
 43D2 MISSILE
 43D2-2 GAM-87A (Skybolts)
 43D2-3 LGM-30 (Minuteman)
 43D2-4 SM-68 (Titan)
 43D2-5 SM-65 (Atlas)
 43D2-6 GAM-83 (AGM-12 Bullpup)
 43D2-7 AGM-69A (SRAM)

43D2-8 AGM-86B
 43D2-9 BGM-109G (Tomahawk)
 43D2-10 LGM-118A (Peacekeeper)
 43D2-11 AGM-129
 43D2-12 AGM-131A (SRAM 2)
 43D2-13 RESERVED
 43D2-14 AGM-65A/B (Maverick)
 43D3 FLIGHT SIMULATORS
 43D3-2 Bomber
 43D3-2-5 B-52
 43D3-2-7 B-52 (Use 43D3-2-5)
 43D3-2-8 B-57
 43D3-3 Cargo
 43D3-3-2 C-97
 43D3-3-3 C-119
 43D3-3-4 C-124
 43D3-3-5 C-130
 43D3-3-6 C-131
 43D3-3-7 C-121
 43D3-3-8 C-135
 43D3-3-9 C-118
 43D3-3-10 C-123
 43D3-3-11 C-133
 43D3-3-12 C-130B (Use 43D3-3-5)
 43D3-3-13 C-130E (Use 43D3-3-5)
 43D3-3-14 C-141
 43D3-3-15 C-5A
 43D3-4 Fighter
 43D3-4-2 F-84
 43D3-4-3 F-86
 43D3-4-4 F-89
 43D3-4-5 F-100
 43D3-4-6 F-101
 43D3-4-7 F-102
 43D3-4-8 F-106A
 43D3-4-9 F-105D
 43D3-4-10 F-4
 43D3-4-11 F-111
 43D3-4-12 F-15
 43D3-4-13 F117A
 43D3-5 Cockpit
 43D3-5-2 F-84
 43D3-5-3 RB-66
 43D3-5-4 T-33
 43D3-5-5 F-104
 43D3-5-6 F-86
 43D3-5-7 F-100
 43D3-5-8 F-105
 43D3-5-9 T-29C
 43D3-5-10 F-102
 43D3-5-11 A-7D
 43D3-5-12 C-5
 43D3-5-13 C-130
 43D3-5-14 C-141
 43D3-5-15 F-16
 43D3-6 Missile

43D3-6-2	TM-61	43D7-17	AN/FRC
43D3-6-3	SM-62	43D7-18	AN/APY
43D3-7	VISUAL	43D7-19	AN/MST
43D3-7-2	SMK-23/F37A-T	43D8	INDOCTRINATION TRAINERS AND CHAMBERS
43D3-7-3	SMK-87/F37A-T	43D8-2	Egress System
43D3-7-4	Virtual Image	43D8-3	Indoctrination Chamber
43D3-7-5	SMK-92/F37A	43D8-3-2	20-Man
43D3-7-6	117/WT	43D8-3-3	16-Man
43D3-8	Attack Aircraft	43D8-3-4	Test Chamber
43D3-8-2	A-7D	43D8-3-5	6-Man
43D3-8-3	A-10A	43D8-3-6	Recompression
43D3-9	Helicopter	43D8-4	High Altitude Helmet and Suit Training Aid
43D3-9-2	CH-3E, HH-53C	43D8-5	Night Vision
43D3-10	Electronic Aircraft	43D8-6	Missiles
43D3-10-2	E-3	43D8-7	Centrifuge
43D3-11	Trainer	43D9	MOCK-UP AIRSPEED TRAINERS
43D3-11-2	T-46A	43D10	DRIVER TRAINING
43D4	GUNNERY TRAINING	43D11	WEAPON SIMULATORS
43D4-2	Fixed	43D12	ENGINES
43D4-3	Flexible	43D13	TRAINERS
43D5	INSTRUMENT FLYING	43D13-2	A/E-37A-T2, -T3, -T4, -T5, -T7
43D6	NAVIGATION	43D13-3	TAU Series
43D7	RADIO AND RADAR	43D13-4	Operator (Do not use)
43D7-2	AN/APG	43D13-5	AF 37A-T18 (Use 43D2-6)
43D7-3	AN/APN	43D14	(Do not use)
43D7-4	AN/APQ; AN/GJW	43D15	(Do not use)
43D7-5	AN/APS	43D16	LAUNCH CONTROL AND CHECKOUT
43D7-6	AN/GJW (See 43D7-4 also)	43D16-2	Control System
43D7-7	AN/GPN	43D16-3	Launch Complex System
43D7-8	AN/GPQ	43D16-4	Launch Operator Trainer
43D7-9	Control	43D16-5	Checkout Trainer
43D7-10	Telemetry	43D16-6	Umbilical Tower Trainer
43D7-11	Countermeasures	43D16-7	Launch Enable System
43D7-12	AN/ASQ and AN/GSQ	43D17	GUIDANCE SYSTEM TRAINERS
43D7-13	Associated Equipment	43D17-2	Airborne
		43D17-3	Ground
		43D17-4	Computer
		43D17-5	Subsystem
		43D18	PROPULSION TRAINERS
		43D18-2	System Trainer
		43D19	FLIGHT CONTROL TRAINERS
		43D19-2	System
		43D19-3	Ground Support Equipment
		43D20	HYDRAULIC AND PNEUMATIC SYSTEMS
		43D20-2	System
43D7-14	Fire Control	43D21	STORAGE, TRANSFER AND PRESSURIZATION
43D7-15	Beacon Set		
43D7-16	Search Radar and Detecting		

NOTE

During about 1960, eight TO numbers, using five groups in the numbering pattern, were assigned in the 43D7-13 series. This was contrary to the standard practice and constitutes an exception. In the event that new TO numbers are added to extend this series, the character "2" used as the fourth group in all above mentioned eight TO numbers should be eliminated. This will change the series pattern to the standard four-group format.

43D21-2	Liquid Oxygen	43DA4	MAGAZINES
43D21-3	Helium	43DA5	DECODERS
43D21-4	Propellant	43DA6	TOOLS
43D22	ELECTRICAL SYSTEMS	43DA7	DESICCATORS
43D22-2	System	43DA8	CYLINDERS AND NITROGEN CYLINDERS
43D22-3	Power Conversion and Distribution	43DA9	CARDS
43D22-4	Trouble Analysis	43DA10	PATCHBOARDS
43D22-5	Missile Safety and Arming	43DA11	AMPLIFIERS
43D23	INSTALLATION AND TRANSPORTATION	43DA12	DRIVERS
43D23-2	Rocket and Explosive Bolt	43DA13	VISUAL SYSTEMS
43D23-3	Ordnance Installation	43DA13-2	Monitor and Components
43D23-4	Engine	43DA13-3	Projector and Components
43D23-5	Missile Handling	43DA13-4	Camera and Components
43D23-6	Pylon/Installation/Missile Loading	43DA14	AUTOMATED FLIGHT TRAINING SYSTEMS
43D23-7	Thermo-Conditioner	43DA14-2	Training Set, Mission - Simulator
43D23-8	Hydraulic System	43E	TRAINING EQUIPMENT
43D24	PROGRAMMERS	43E1	CARRIERS
43D24-2	Propellant Loading	43E1-2	Target
43D24-3	Propulsion Signal	43E1-3	Radar
43D25	TEST SET (Do not use)	43E1-4	Electricity Demonstration
43D26	PROCEDURES	43E2	CONTROLS
43D27	ALIGNMENT TRAINERS	43E2-2	Auto-Pilot
43D28	ANTENNA SYSTEM TRAINERS	43E2-3	Pneumatic
43D29	SILO TRAINERS	43E3	KITS
43D30	AIR-CONDITIONING	43E3-2	Film Assessing
43D31	LAUNCHER TRAINERS	43E3-3	Radar Set Adapter
43D32	LAUNCH SITE TRAINERS	43E3-4	Radar Set Dolly
43D32-2	Equipment	43E4	GENERATORS
43D32-3	Operation and Maintenance	43E4-2	Signal
43D33	MAINTENANCE	43E5	PANELS
43D33-2	Security Support Bench	43E6	POWER SYSTEMS
43D33-3	Thermo-Conditioner	43E6-2	Windlass
43D34	NETWORKS	43E6-3	Power Supply
43D34-2	Sequence and Monitor	43E6-4	Rectifier
43D35	INSPECTION	43E6-5	Engine
43D36	SAFETY	43E6-6	Motor Generator
43D37	COMMUNICATIONS	43E7	RADIO AND RADAR
43D37-2	System	43E7-2	Accessory
43D38	ATMOSPHERIC RESEARCH EQUIPMENT	43E7-3	Interphone System
43D39	GROUND ELECTRONIC SYSTEMS	43E7-4	Radio Range
43DA	ASSOCIATED EQUIPMENT	43E7-5	Training Set
43DA1	PRINTER MECHANISM	43E7-6	Signal
43DA2	RECORDERS	43E7-7	Scorer
43DA3	ANNOUNCERS	43E7-8	Receiver
		43E7-9	Amplifier
		43E7-10	Converter

43E8	RECORDERS - REPRODUCERS (See 43X16 also)	43E23-5	Bomber Aircraft
43E8-2	Sound	43E23-5-2	B-52
43E9	READERS AND VISICORDERS	43E24	MOBILE TRAINERS
43E10	SIMULATORS	43E24-2	Cargo Aircraft
43E10-2	Bombsight	43E24-2-2	C-141
43E10-3	Radio, Radar	43E24-2-3	C-135
43E10-4	Line Store	43E24-2-4	C-133
43E10-5	Small Arms Fire	43E24-2-5	EC-121
43E10-6	Circuit Analysis	43E24-2-6	C-123
43E10-7	Signal	43E24-2-7	C-5A
43E10-8	Switch	43E24-2-8	C-10
43E10-9	Mortar	43E24-2-9	C-130
43E10-10	Antenna Assembly	43E24-2-10	C-17
43E10-11	Motion System	43E24-3	Fighter Aircraft
43E10-12	Control Tower	43E24-3-2	F-5
43E11	TARGETS	43E24-3-3	F-105
43E12	TRANSPONDER GROUPS (Interconnector)	43E24-3-4	F-111
43E14	WINDLASSES	43E24-3-5	F-4
43E15	CATAPULTS	43E24-3-6	F-106
43E16	LAUNCHERS	43E24-3-7	F-100
43E17	TOW TARGETS	43E24-3-8	F-101/RF-101
43E17-2	Actuator	43E24-3-9	F-15
43E17-3	Cart	43E24-3-10	F-16
43E18	LOADING	43E24-4	Helicopter Aircraft
43E19	TELEGRAPHIC	43E24-4-2	UH-1
43E19-2	Code Training	43E24-4-3	HH-53C
43E20	REGULATORS	43E24-5	Bomber Aircraft
43E20-2	Oxygen	43E24-5-2	B-52
43E20-3	Pressure	43E24-5-4	B-1B
43E21	LIQUID	43E24-5-5	B-2A
43E21-2	Oxygen	43E24-6	Attack Aircraft
43E22	CHEMICALS	43E24-6-2	A-7
43E22-2	Biological and Radiological	43E24-6-3	A-37
43E23	RESIDENT TRAINERS	43E24-6-4	A-10
43E23-2	Cargo Aircraft	43E24-7	Observation Aircraft
43E23-2-2	C-141A	43E24-7-2	OV-10A
43E23-2-3	C-5A	43E24-8	Trainer Aircraft
43E23-3	FIGHTER ACFT	43E24-8-2	T-38
43E23-3-2	F-5A	43E24-8-3	T-46
43E23-3-3	F-4	43E24-8-11	T-38A
43E23-3-4	F-15	43E24-9	Electronic Aircraft
43E23-3-5	F117A	43E24-9-2	E-3
43E23-4	Helicopters	43E25	PROJECTORS
43E23-4-2	HH-43	43E26	DIGITAL COMPUTERS (Use 31S5)
43E23-4-3	HH-53B	43E27	WIND TUNNELS
43E23-4-4	TF-1F	43E28	EXPLOSIVE DISPOSAL
43E23-4-5	UN-1N	43E29	BOMBING SYSTEMS TRAINER
		43E30	GUNSHIP SYSTEMS TRAINERS
		43E30-2	C-130

43EA	ASSOCIATED EQUIPMENT (Use 43X)	43X10-2	Universal Delivery
		43X10-3	Monitor
43X	COMPONENTS	43X10-4	Electrical
		43X10-5	Installation
43X1	AUTOSYNS	43X11	THERMOSTATS
43X2	CABLES	43X12	REELS
43X3	DISPLAYS	43X12-2	Tow Target
43X3-2	Radar Data	43X13	LOAD SENSOR
43X3-3	Graphic	43X14	VALVES
43X3-4	Control	43X15	AMPLIFIERS
43X3-5	System	43X16	RECORDERS (See 43E8 also)
43X4	FLARES		
43X5	INDICATORS	43X17	PUMPS
43X5-2	Altimeter	43X17-2	Vacuum
43X5-3	Artificial Horizon	43X17-3	Hydraulic
43X5-4	Cross Pointer	43X18	SETTING DEVICES
43X5-5	Directional Gyroscope	43X19	DISCONNECT UNITS
43X5-6	Landing	43X20	TRAINER ATTACHMENTS
43X5-7	Standard Beam Approach	43X21	MECHANISMS AND DRIVES, DISK DRIVES
43X5-8	Turn and Bank	43X22	STANDS
43X5-9	Single Autosyn	43X23	COMPRESSORS
43X5-10	Photo Firing	43X24	CYLINDERS
43X5-11	Accelerometer	43X25	ACTUATORS
43X5-12	Attitude	43X26	ACCUMULATORS
43X5-13	Doppler	43X27	TANK ASSEMBLIES
43X5-14	Compass	43X28	POWER UNITS
43X5-15	Altitude	43X29	NAVIGATION
43X5-16	Oxygen	43X30	SERVOS
43X5-17	Tachometer	43X31	PANELS
43X5-18	Airspeed	43X32	GEAR BOXES
43X5-19	Flap	43X33	SERVOMOTORS
43X5-20	Landing Gear	43X34	LIGHT ASSEMBLIES
43X5-21	Fuel	43X35	COMPUTERS
43X5-22	Velocity	43X36	CONVERTERS
43X5-23	Temperature	43X37	ALTIMETERS
43X5-24	Oil Pressure	43X38	UNITS
43X5-25	Digital Angle	43X39	PLOTTERS
43X5-26	Radar Navigator	43X40	GENERATORS
43X5-27	Groundspeed	43X40-2	Target
43X5-28	Rudder Trim	43X40-3	Sweep
43X5-29	Hydraulic Pressure	43X40-4	Pulse
43X5-30	Torque		
43X5-31	Hover		
43X5-32	Engine		
43X5-33	Horizontal Situation		
43X5-34	Course		
43X6	MAPS		
43X6-2	Supersonic Radar		
43X7	METERS AND MEASURING EQUIPMENT		
43X8	COUNTERS AND TIMERS		
43X9	PROTECTIVE BAGS		
43X10	ADAPTERS		

43X40-5	Function	43X51	TRANSLATORS
43X40-6	Vector	43X52	CARD ASSEMBLIES
43X41	POWER SUPPLIES	43X53	VOLTAGE, CURRENT, AND RESISTANCE UNITS
43X42	KITS	43X54	TAPES AND DRUM ASSEMBLIES AND COMPONENTS
43X43	CONTROLS	43X55	GAUGES
43X44	DATA TERMINALS	43X56	SYSTEMS
43X45	TAPE TRANSPORTS	43X57	HUMIDIFIERS
43X46	MONITORS	43X58	PROJECTORS
43X47	PRINTERS	43X59	PALLET ASSEMBLIES
43X48	READOUT UNITS		
43X49	ANALYZERS		
43X50	MODULES		

CHAPTER 35

CATEGORY 44 - COMMON HARDWARE EQUIPMENT

35-1 GENERAL.

35-1.1 Category 44 contains two common hardware equipment systems. These systems are divided into equipment series and the equipment series are further divided into equipment sub-series. TO numbers in Category 44 use both three and four basic groups for data identification. The numbering patterns for both forms are discussed in paragraph 35-2, below.

35-1.2 TO data pertaining to more than one system in this category is numbered in the category general series.

35-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

35-2 NUMBERING PATTERNS.

35-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

35-2.1.1 Part one is always the numeric 44 identifying Category 44.

35-2.1.2 Part two is an alpha character identifying the various hardware systems, i.e., B - bearings; and H - hardware.

35-2.1.3 Part three contains one or more numeric characters that identify the equipment series within a system. The numbering series for this category is outlined in paragraph 35-4.

35-2.2 **GROUP TWO.** TO numbering patterns in Category 44 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

35-2.2.1 If the TO number uses only three basic groups, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

35-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

35-2.3 **GROUP THREE.**

35-2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements
- 7 Installation Instructions

35-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 44:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

35-2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

35-2.4 **GROUP FOUR.** In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 35-2.3.1, above.

35-3 EXAMPLES OF CATEGORY 44 NUMBERING PATTERNS.

35-3.1 A maintenance manual for anti-friction bearings:

44B-1-102	
44	Category 44
B	Bearings
1	System General Series
102	Number Reserved for General Series Maintenance Instructions

35-3.2 Overhaul instructions for an air starter coupling assembly, PN 3127-10:

44H1-2-3-3

44	Category 44
H	Hardware
1	Aircraft Common Hardware Series
2	Coupling Subseries
3	Represents PN 3127-10
3	Number Reserved for Overhaul Instructions

35-4 CATEGORY 44 NUMBERING SERIES.

44	COMMON HARDWARE EQUIPMENT
44B	BEARINGS
44H	HARDWARE
44H1	AIRCRAFT COMMON HARDWARE
44H1-2	Coupling
44H1-3	Valve
44H2	UTILITY HARDWARE
44H2-2	Washer
44H2-3	Security Hardware
44H3	AIRCRAFT HOSE CLAMPS

CHAPTER 36

CATEGORY 45 - RAILROAD EQUIPMENT

36-1 GENERAL.

36-1.1 Category 45 contains two railroad equipment systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 36-2, below.

36-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

36-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

36-2 NUMBERING PATTERNS.

36-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

36-2.1.1 Part one is always the numeric 45 identifying Category 45.

36-2.1.2 Part two is an alpha character identifying the railroad equipment systems, i.e., A - rolling stock; and E - right-of-way maintenance equipment. Associated equipment for these systems is identified by adding the alpha A immediately following the system identifier, i.e., AA or EA.

36-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 36-4.

36-2.2 **GROUP TWO.** TO numbering patterns in Category 45 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

36-2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

36-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries will be identified with one or more

numeric characters in group two, and the model, type or PN is identified in group three.

36-2.3 **GROUP THREE.**

36-2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

36-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards, supplements or other media. The following alpha characters are authorized for use in Category 45:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

36-2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

36-2.4 **GROUP FOUR.** In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 36-2.3.1, above.

36-3 EXAMPLES OF CATEGORY 45 NUMBERING PATTERNS.

36-3.1 Operating instruction for diesel electric locomotive, model 539-S:

45A2-2-13-1	
45	Category 45
A	Rolling Stock
2	Locomotive Series
2	Diesel Electric Subseries
13	Represents Model 539-S
1	Number Reserved for Operating Instructions

36-3.2 Illustrated parts breakdown for a railway diesel crane, model 825D:

45E4-2-5-4

45	Category 45
E	Right-of-Way Maintenance Equipment
4	Crane Series
2	Diesel Crane Subseries
5	Represents Model 825D
4	Number Reserved for Illustrated Parts Breakdown

36-4 CATEGORY 45 NUMBERING SERIES.

45	RAILROAD EQUIPMENT
45A	ROLLING STOCK
45A1	CARS
45A1-2	Box
45A1-3	Flat
45A1-4	Hospital Unit
45A1-5	Maintenance
45A1-6	Tank
45A2	LOCOMOTIVES
45A2-2	Diesel, Electric
45A2-3	Gasoline

45AA	ASSOCIATED EQUIPMENT
45AA2	BRAKE EQUIPMENT
45E	RIGHT-OF-WAY MAINTENANCE EQUIPMENT
45E1	BRAKES
45E2	BRIDGES
45E3	COMPRESSORS
45E4	CRANES
45E4-2	Diesel
45E4-3	Gasoline
45E4-4	Steam
45E5	DERRICKS
45E6	HAMMERS
45E7	SIGNAL DEVICES
45E8	TRACKS
45E9	TRACK SHIFTERS
45E10	JACKS
45E11	WINCHES
45E12	HEATERS
45E13	TAMPERS

CHAPTER 37

CATEGORY 46 - OFFICE, DUPLICATING, PRINTING AND BINDING EQUIPMENT

37-1 GENERAL.

37-1.1 Category 46 contains three systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 37-2 below.

37-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

37-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

37-2 NUMBERING PATTERNS.

37-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

37-2.1.1 Part one is always the numeric 46 identifying Category 46.

37-2.1.2 Part two is an alpha character identifying the various systems, i.e., A - office equipment; D - duplicating equipment; and P - printing and binding equipment.

37-2.1.3 Part three contains one or more numeric characters identifying equipment series within a system. The numbering series for this category is outlined in paragraph 37-4.

37-2.2 GROUP TWO. TO numbering patterns in Category 46 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering patterns for both forms:

37-2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

37-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

37-2.3 GROUP THREE.

37-2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

37-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 46:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

37-2.3.3 If the TO number contains four basic groups, the third group will have one or more numeric characters representing the model, type or PN assigned to specific equipment.

37-2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 37-2.3.1, above.

37-3 EXAMPLES OF CATEGORY 46 NUMBERING PATTERNS.

37-3.1 A maintenance manual for a calculator, model 9820A:

46A1-4-5-2	
46	Category 46
A	Office Equipment
1	Machine Series
4	Calculator Subseries
5	Represents Model 9820A
2	Number Reserved for Maintenance Manuals

37-3.2 An operating instruction for a mimeograph duplicator, model 92:

46D1-9-2-1

46	Category 46
D	Duplicating Equipment
1	Machine Series
9	Stencil Subseries
2	Represents Model 92
1	Number Reserved for Operating Instructions

37-4 CATEGORY 46 NUMBERING SERIES.

46 OFFICE, DUPLICATING,
PRINTING, AND BINDING
EQUIPMENT

46A OFFICE EQUIPMENT

46A1 MACHINES

46A1-2 Accounting

46A1-3 Adding

46A1-4 Calculating

46A1-5 Card Recording

46A2 PANTOGRAPHS

46A3 SAFES AND LOCKERS

46A4 TYPEWRITERS

46A5 READERS

46D DUPLICATING EQUIPMENT

46D1 MACHINES

46D1-2 Addressing

46D1-3 Blue Printing

46D1-4 Embossing

46D1-5 Gelatin

46D1-6 Photographic

46D1-7 Plate

46D1-8 Spirit

46D1-9 Stencil

46D1-10 White Print

46P PRINTING AND BINDING
EQUIPMENT

46P1 CUTTERS

46P2 DRILLS

46P3 FRAMES

46P4 GRAINING MACHINES

46P5 PRESSES

46P6 WHIRLERS

CHAPTER 38

CATEGORY 47 - AGRICULTURE EQUIPMENT

38-1 GENERAL.

38-1.1 Category 47 contains four agriculture systems which are divided into equipment series. This category does not have a division of its equipment series into equipment subseries. Therefore the TO numbering pattern for this category will only contain three basic groups.

38-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

38-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

38-2 NUMBERING PATTERNS.

38-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

38-2.1.1 Part one is always the numeric 47 identifying the Category 47.

38-2.1.2 Part two is an alpha character identifying the agriculture systems, i.e., A - cultivation and soil preparation equipment; B - harvesting equipment; C - mowing equipment; D - weed and pest control. Associated equipment is identified by adding an alpha A immediately following the system identifier, e.g., AA.

38-2.1.3 Part three contains one or more numeric characters identifying equipment series within a system. The numbering series for this category is outlined in paragraph 38-4.

38-2.2 GROUP TWO. Inasmuch as the numbering pattern for this category has only three basic groups, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

38-2.3 GROUP THREE.

38-2.3.1 The third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 47:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown

-6 Inspection Requirements

38-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 47:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

38-3 EXAMPLE OF CATEGORY 47 NUMBERING PATTERNS.

38-3.1 An operating instruction for a sprayer, PN 44-10000-1:

47D1-5-1	
47	Category 47
D	Weed and Pest Control Equipment
1	Sprayer Series
5	Represents PN 44-10000-1
1	Number Reserved for Operating Instructions

38-4 CATEGORY 47 NUMBERING SERIES.

47	AGRICULTURE EQUIPMENT
47A	CULTIVATION AND SOIL PREPARATION
47A1	CULTIVATORS
47A2	HARROWS
47A3	PLOWS
47A4	SOIL MIXERS
47B	HARVESTING EQUIPMENT
47C	MOWING EQUIPMENT
47C1	LAWN MOWERS
47C2	TURF MOWERS
47C3	LAWN EDGERS
47D	WEED AND PEST CONTROL EQUIPMENT
47D1	SPRAYERS
47D2	WEED BURNERS

CHAPTER 39

CATEGORY 49 - OPTICAL INSTRUMENTS, TIMEKEEPING AND NAVIGATION EQUIPMENT

39-1 GENERAL.

39-1.1 Category 49 contains three systems that are divided into three equipment series. This category does not have a division of its equipment series into equipment subseries. Therefore the TO numbering pattern for this category will only contain three basic groups.

39-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

39-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

39-2 NUMBERING PATTERNS.

39-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

39-2.1.1 Part one is always the numeric 49 identifying Category 49.

39-2.1.2 Part two is an alpha character identifying the various systems, i.e., A - optical instruments; B - timekeeping equipment; and C - navigation equipment. Associated equipment for these systems are identified by adding the alpha A immediately following the system identifier, e.g., AA.

39-2.1.3 Part three contains one or more numeric characters identifying equipment series within a system. The numbering series for this category is outlined in paragraph 39-4.

39-2.2 GROUP TWO. Since the numbering pattern for this category uses only three basic groups, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

39-2.3 GROUP THREE.

39-2.3.1 The third group identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in Category 49:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown

-5 Test Procedures

-6 Inspection Requirements

39-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 49:

CL - Checklists

S - Operational Supplements

SS - Safety Supplements

WC - Workcards

39-3 EXAMPLES OF CATEGORY 49 NUMBERING PATTERNS.

39-3.1 An operating instruction for a navigation watch, type AN5740:

49B2-3-1	
49	Category 49
B	Timekeeping Equipment
2	Watch Series
3	Represents Type AN5740
1	Number Reserved for Operating Instructions

39-3.2 Test procedures for a surveying compass, type N5334:

49C1-4-5	
49	Category 49
C	Navigation Equipment
1	Compass Series
4	Represents Type N5334
5	Number Reserved for Test Procedures

39-4 CATEGORY 49 NUMBERING SERIES.

49	OPTICAL INSTRUMENTS, TIMEKEEPING, AND NAVIGATION EQUIPMENT
49A	OPTICAL INSTRUMENTS
49A1	BINOCULARS
49A2	MOUNTS
49A3	QUADRANTS
49A4	TELESCOPES

49A5	TRANSITS	49A16	RANGE FINDERS
49A6	PERISCOPES	49A17	SPECTROPHOTOMETERS
49A7	AIMING CIRCLES	49AA	ASSOCIATED EQUIPMENT
49A8	THEODOLITES	49AA1	ALIDADES
49A9	COLLIMATORS	49B	TIMEKEEPING EQUIPMENT
49A10	MISSILE LAYING EQUIPMENT	49B1	CLOCKS
49A11	CALIBRATION AND ALIGNMENT EQUIPMENT	49B2	WATCHES
49A12	SPOTTING SETS	49B3	TIMERS
49A13	MICROSCOPES	49C	NAVIGATION EQUIPMENT
49A14	CATHEOMETER	49C1	COMPASSES
49A15	CLINOMETERS	49C2	INDICATORS

CHAPTER 40

CATEGORY 50 - SPECIAL SERVICES EQUIPMENT

40-1 GENERAL.

40-1.1 Category 50 contains four systems. These systems are divided into equipment series and the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 40-2 below.

40-1.2 TO data pertinent to more than one system in this category is numbered in the category general series.

40-1.3 Information relating to more than one equipment series within a system is numbered in the system general series.

40-2 NUMBERING PATTERNS.

40-2.1 **GROUP ONE.** This group has three parts identifying the category, system and equipment series.

40-2.1.1 Part one is always the numeric 50 identifying Category 50.

40-2.1.2 Part two is an alpha character identifying the special services equipment systems, i.e., A - musical instruments; B - athletic equipment; C - sanctuary equipment; and D - laundry equipment.

40-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 40-4.

40-2.2 **GROUP TWO.** TO numbering patterns in Category 50 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

40-2.2.1 If only three groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

40-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment series is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

40-2.3 **GROUP THREE.**

40-2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

- 1 Operating Instructions
- 2 Service or Maintenance Manuals
- 3 Depot Maintenance or Overhaul Instructions
- 4 Illustrated Parts Breakdown
- 6 Inspection Requirements

40-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 50:

- CL - Checklists
- S - Operational Supplements
- SS - Safety Supplements
- WC - Workcards

40-2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

40-2.4 **GROUP FOUR.** In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 40-2.3.1, above.

40-3 EXAMPLES OF CATEGORY 50 NUMBERING PATTERNS.

40-3.1 Operating instructions for an electric organ, model C-2G:

50A1-3-3-1	Category 50
50	Musical Instruments
A	Organ Series
1	Electronic Organ Subseries
3	Represents Model C-2G
3	Number Reserved for
1	Operating Instructions

40-3.2 Illustrated parts breakdown for laundry unit, model ELT9T:

50D1-2-14

50	Category 50
D	Laundry Equipment
1	Laundry Unit Series
2	Represents Model ELT9T
14	Number Reserved for Illustrated Parts Breakdown

40-4 CATEGORY 50 NUMBERING SERIES.

50	SPECIAL SERVICES EQUIPMENT
50A	MUSICAL INSTRUMENTS
50B	ATHLETIC EQUIPMENT
50C	SANCTUARY EQUIPMENT
50D	LAUNDRY EQUIPMENT
50D1	LAUNDRY UNITS

CHAPTER 41

CATEGORY 51 - AUTOMATIC TEST SYSTEMS

41-1 GENERAL.

41-1.1 Normally test procedures, test control or programmed test TOs are numbered with related equipment in the various airborne and ground component categories. However, TOs pertaining to depot level, automatic test equipment software and software instruction manuals are numbered in Category 51. Three types of automatic test equipment numbered in this category can be defined as Computer Operated Multifunction Electronic Test Stations (COMETS); General Purpose Automatic Test Systems (GPATS); and Versatile Automatic Test Equipment Systems (VATES). GPATS and VATES TOs relate test modules to Line Replaceable Units (LRUs) and Shop Replaceable Units (SRUs) of an airborne or ground system. COMETS TOs identify LRUs and SRUs with a test system. Another basic difference between these automatic systems is GPATS and VATES test software do not require computer memory banks for test operations and can only test singular Units Under Test (UUTs). COMETS test software operates with computer memory banks and has the capability to test components of several systems on one test station.

41-1.2 Automatic Test Equipment in Category 51 contains seven systems. These systems are divided into equipment series and some of the equipment series are further divided into equipment subseries. TO numbers in this category use both three and four basic groups for data identification. The numbering pattern for both forms are discussed in paragraph 41-2, below.

41-1.3 TO data pertinent to more than one system in this category is numbered in the category general series.

41-1.4 Information relating to more than one equipment series within a system is numbered in the category general series.

41-2 NUMBERING PATTERNS.

41-2.1 GROUP ONE. This group has three parts identifying the category, system and equipment series.

41-2.1.1 Part one is always the numeric 51 identifying Category 51.

41-2.1.2 Part two is an alpha character identifying the various systems, i.e., C - computer operated multifunction electronic test stations; E - aircraft engines; N - navigation instruments; P - radar equipment; T - master hardware; and V - versatile automatic test equipment.

41-2.1.3 Part three contains one or more numeric characters identifying the equipment series within a system. The numbering series for this category is outlined in paragraph 41-4.

41-2.2 GROUP TWO. TO numbering patterns in Category 51 use both three and four basic groups; therefore, the identifiers in group two are not constant. The following describes the numbering pattern for both forms:

41-2.2.1 If only three basic groups are used in a numbering pattern, group two contains one or more numeric characters representing the model, type or PN assigned to specific equipment.

41-2.2.2 If the TO number contains four basic groups, the equipment series identified in part three of group one has been further divided into equipment subseries. In this case, the equipment subseries is identified with one or more numeric characters in group two, and the model, type or PN is identified in group three.

41-2.3 GROUP THREE.

41-2.3.1 If a TO number has only three basic groups, the third group of the numbering pattern identifies the type of TO. The following is a list of numbers reserved to identify specific types of TOs in this category:

-06	Work Unit Code Manuals
-07	thru -09 Reserved
-1	Operating Instructions
-2	Service or Maintenance Manuals
-4	Illustrated Parts Breakdown
-6	Inspection Requirements
-7	Installation Instructions and Installation Test Procedures
-8	Test Procedures, Checkout Manuals, or Programmed Tests

41-2.3.2 In some instances the reserved numbers listed above are followed by one or more alpha

characters indicating a series of checklists, workcards or supplements. The following alpha characters are authorized for use in Category 51:

CL - Checklists
S - Operational Supplements
SS - Safety Supplements
WC - Workcards

41-2.3.3 If the TO number contains four basic groups, the third group has one or more numeric characters representing the model, type or PN assigned to specific equipment.

41-2.4 GROUP FOUR. In those cases where the TO number contains four basic groups, the fourth group identifies specific types of TOs defined in paragraph 41-2.3.1, above.

41-3 EXAMPLES OF CATEGORY 51 NUMBERING PATTERNS.

41-3.1 Operating and maintenance instructions with parts list for a microwave shop repair unit test adapter, PN 12A11786-1:

51C1-7-1
51 Category 51
C Computer Operated Test Station
1 Microwave SRU Test Station Series
7 Represents PN 12A11786-1
1 Number Reserved for Operating Instructions

41-3.2 Checkout manual for TF-39-GE-1A gas turbine engine:

51E1-3-18-1
51 Category 51
E Aircraft Engine
1 Jet Engine Series
3 Represents TF-39 Model Engine
18 Number Reserved for Checkout Manuals
1 First Manual in a Series

41-3.3 Operating and service instruction for a ratio transformer, PN 588618-401:

51T21-2-1
51 Category 51
T Master Hardware
21 Transformer Series
2 Represents PN 588618-401
1 Number Reserved for Operating Instructions

41-3.4 Checkout manual for type SN-38011/APQ-113 fire control radar:

51P2-2-7-8-1
51 Category 51
P Radar Equipment
2 Fire Control Radar Series
2 AN/APQ Subseries
7 Represents SN-38011/APQ-113
8 Number Reserved for Checkout Manuals
1 First Manual in a Series

41-4 CATEGORY 51 NUMBERING SERIES.

51 AUTOMATIC TEST EQUIPMENT
51C COMPUTER OPERATED TEST STATIONS (COMETS)
51C1 MICROWAVE SHOP REPAIR UNIT TEST STATIONS
51C2 HIGH VOLTAGE VIDEO ANALOG MODULE TEST STATIONS
51C3 MULTIFUNCTION ANALOG/DIGITAL MODULE TEST STATIONS
51C4 PRECISION AC/DC ANALOG MODULE TEST STATIONS
51C5 DIGITAL LOGIC MODULE TEST STATIONS
51C6 AEROSPACE GROUND EQUIPMENT MODULE TEST STATIONS
51C7 LOGIC CIRCUIT CARD ANALYZER TEST STATIONS
51C8 HEADS UP DISPLAY CATHODE RAY TUBE ELECTRONICS TEST STATIONS
51C9 SYSTEM TIMING UNIT SCAN CONVERTER TUBE TEST STATIONS
51C10 DOPPLER RADAR ANTENNA CALIBRATION SYSTEM TEST STATIONS
51C11 GENERAL RADIO GR1792D SYSTEM
51E AIRCRAFT ENGINES
51E1 JET ENGINES
51E1-2 J-79
51E1-3 TF-39
51E1-5 J-57

51E1-7	TF-30	51T3	ANALYZER
51E1-8	TF-33	51T4	CONTROLLERS
51E1-9	TF-41	51T5	CONVERTERS
51E1-10	T-56	51T6	GENERATORS
51N	NAVIGATION INSTRUMENTS	51T7	INDICATORS
51N1	NAVIGATION SYSTEMS	51T8	LOAD ASSEMBLIES
51N2	INERTIAL REFERENCE UNITS	51T9	MEMORY UNITS
51N3	COMPUTER DISPLAY UNITS	51T10	METERS
51N4	ALL WEATHER LANDING SYSTEMS	51T11	MONITORS
51P	RADAR EQUIPMENT	51T12	OSCILLATORS
51P1	TERRAIN FOLLOWING RADAR	51T13	POWER SUPPLIES
51P1-2	Type AN/APQ	51T14	PRINTERS
51P2	FIRE CONTROL RADAR	51T15	READERS
51P2-2	Type AN/APQ	51T16	READOUTS
51P2-3	Type AN/APA	51T17	SIMULATORS
51P2-4	Type AN/GJQ	51T18	SWITCHING UNITS
51P2-5	Type AN/AWG	51T19	RESISTANCE UNITS
51P3	IDENTIFICATION FRIEND-OR-FOE RADIO SETS	51T20	TAPE PREPARATION UNITS
51P3-2	Type AN/APX	51T21	TRANSFORMERS
51P4	ULTRA HIGH FREQUENCY COMMUNICATION SETS	51T22	SYNTHESIZERS
51P4-2	Type AN/APS	51T23	AVIONICS INTERFACE UNITS
51P5	COUNTERMEASURES SETS	51T24	PUNCHES
51P5-2	Type AN/ALR	51T25	SUBSCRIBERS
51P5-3	Type AN/ALE	51T26	ADAPTERS
51P6	ALTIMETERS	51T27	ELECTRONIC CIRCUIT PLUG-IN UNITS
51P6-2	Type AN/APN	51T28	FLIGHT CONTROL COMPUTERS
51P7	INTERFERENCE BLANKER	51T29	PHOTOGRAPHY
51P7-2	Type AN/U	51V	VERSATILE AUTOMATIC TEST EQUIPMENT
51R	RADIO EQUIPMENT	51V1	GUIDANCE EQUIPMENT
51R1	AUTOMATIC DIRECTION FINDER	51V2	ADAPTERS
51R1-2	Type AN/ARA	51V3	ANALYZERS
51R2	TACTICAL AIR NAVIGATION	51V4	CONVERTERS
51R2-2	Type AN/ARN	51V5	FREQUENCY MEASURING
51R2-3	Type AN/ARN-21C	51V6	MULTIMETERS
51R3	INSTRUMENT LANDING SYSTEM RADIO RECEIVING	51V7	POWER SUPPLIES
51R3-2	Type AN/ARN	51V8	VOLTMETERS
51R4	INTERCOMMUNICATION SET		
51R4-2	Type AN/AIC		
51T	MASTER HARDWARE		
51T1	MASTER HARDWARE SYSTEMS		
51T2	AMPLIFIERS		

CHAPTER 42

ALPHABETICAL LIST OF EQUIPMENT NAMES TO TECHNICAL ORDER NUMBER GROUPS

ABSORBERS

Air-Conditioning and Pressurizing..... 15A17

ACCELEROMETERS

Automatic Flight Control System..... 5A24

Bombing System 11B63

Fire Control System 11F2

Flight Instrument 5F2

Guidance and Control System 11G14-4

Navigation Instrument..... 5N9

Training Component Indicator 43X5-11

ACCELEROMETERS AND GYROS, COMBINED

Automatic Flight Control System..... 5A32-2

ACCUMULATORS

Aircraft or Missile Engine Fuel
System..... 6J25Hydraulic System, Aircraft and
Missile 9H1

Missile Support..... 35M21

Pneumatic System, Aircraft and
Missile 9P1

Training Component..... 43X26

ACTUATORS

Air Refueling System..... 6A1

Airborne Mechanical..... 16A1

Alternating- and Direct-Current,
Airborne 8C1

Alternating-Current, Airborne..... 8A1

Automatic Flight Control System..... 5A44

Direct-Current, Airborne..... 8D1

Egress System..... 11P9

Engine Fuel System 6J29

Guidance System 11G12

Hydraulic System, Aircraft and
Missile 9H2

Loading and Servicing, Associated..... 35DA6

Missile Support..... 35M27

Pneumatic System, Aircraft and
Missile 9P2

Rocket Engine Fuel System..... 6K12

Supercharger Control, Airborne-
Engine 2RA5-3

Training Component..... 43X25

ACTUATORS AND MOTORS

Airborne Electrical System 8

Alternating- and Direct-Current 8C1

Alternating-Current..... 8A1

Direct-Current..... 8D1

ADAPTER ASSEMBLIES

Structural Component, Airframe..... 16W35

ADAPTER KITS

Photographic 10G17

ADAPTER UNITS

Bombing System 11B95

Checkout, Missile..... 31X2-56

Supercharger Control System..... 2RA5-13

ADAPTERS

Air Refueling System..... 6A17

Automatic Flight Control System..... 5A2

Camera Control System 10A6-20

Cluster Bomb 11A12

Electric Power Supply 35CA28

Engine and Temperature Instrument..... 5E2

Fire Control System 11F3

Fuel- and Oil-Handling 37A1

Launcher..... 11LA8

Loading and Servicing..... 35DA3-6

Missile Support 35M35

Navigation Instrument..... 5N19

Rocket Engine Fuel System..... 6K11

Shop Support..... 34Y21

Starting..... 35D12-3

Training Components 43X10

Turbojet and Turboprop Aircraft and
Engine Fuel System 6J12

ADMINISTRATIVE PUBLICATIONS

Blank Forms..... 00-35D

General Technical Order 00-35

Supply 00-35A

AERIAL DELIVERY SYSTEMS

Cargo Loading, Tiedown, and Aerial
Delivery 13C

Kit 13C7

Pick-up System 13C8

AEROSPACE VEHICLES

Booster 22G

Probe 22P

Rocket 22R

Satellite 22S

Spacecraft..... 22J

AFT HUB (TAIL)

Rotor Assembly 3R1-8

AFTERBURNER CONTROL SYSTEMS

Jet Engine 2JA1

AGENTS	
Chemical Warfare	11C1
AGRICULTURE EQUIPMENT	
Mowing	47C
Weed and Pest Control	47D
AIMING CIRCLES	
Optical Instrument	49A7
AIR COMPRESSORS	
Shop Support	34Y1
Vehicle Components	36Y58
AIR-CONDITIONERS	
Commercial	40A1
Simulator and Training	43D30
Utility Operating	35E9
Utility Operating, Associated	35EA4
AIR-CONDITIONING AND PRESSURIZING EQUIPMENT	
Aircraft and Missile	15A
AIR-CONDITIONING, HEATING, PLUMBING, REFRIGERATING, VENTILATING AND WATER TREATING EQUIPMENT, COMMERCIAL	
Air-Conditioning	40A
Heating	40H
Plumbing	40P
Refrigerating	40R
Ventilating	40V
Water Treating	40W
AIR EQUIPMENT	
Engine Component, Nonaeronautical	38X25
AIR EVACUATION	
General Technical Order	00-75
AIR INSTALLATION	
Electrical Facility	00-105A
Fire Protection and Rescue	00-105E
General Technical Order	00-105
Harvest Eagle Water System	00-105K
AIRBORNE EQUIPMENT	
Electronic	12
Instrument	5
Mechanical	16
Weapon	11W
AIRCRAFT	
Attack	1A
Bomber	1B
Cargo/Transport	1C
Fighter	1F
Helicopter	1H
Observation	1L
Special Electronic	1E
Trainer	1T
Utility	1U
AIRCRAFT FURNISHINGS AND IN-FLIGHT FEEDING, CARGO LOADING, AERIAL DELIVERY AND RECOVERY, AIRCRAFT FIRE DETECTION AND EXTINGUISHING EQUIPMENT	
Cargo Loading, Tiedown and Aerial	
Delivery	13C
Fire Detecting and Extinguishing	13F
Furnishing	13A
Inflight Feeding	13B
Recovery	13D
AIRFRAME COMPONENTS (STRUCTURAL)	
Airborne Mechanical	16W
AIRSPEED COMPENSATORS	
Automatic Flight Control	5A6-2
AIRSPEED TRAINERS	
Mock-up	43D9
ALARMS	
Launch Control and Countdown,	
Missile	31X3-31
ALIDADES	
Optical Instrument	49AA1
ALIGNMENT AND CALIBRATION EQUIPMENT	
Optical	49A11
ALIGNMENT ASSEMBLIES	
Checkout, Missile	31X2-63
ALPHABETICAL PUBLICATIONS	
Technical Order Index	0-2
ALTERNATING AND DIRECT CURRENT SYSTEMS	
Airborne Electrical	8C
ALTERNATING CURRENT SYSTEMS	
Airborne Electrical	8A
ALTERNATORS	
Electrical Power Supply, Associated	35CA24
Propeller, Electrical	3EA1
Propeller, Hydraulic	3HA11
ALTIMETERS	
Automatic Test	51P6
Bombing System	11B89
Flight Instrument	5F3
Ground Guidance, Missile	31X7-51
Training Component	43X37
ALTITUDE COMPENSATORS	
Automatic Flight Control System	5A6-3
AMBULANCES	
Aerial Delivery	13C7-25
Vehicle	36A1

AMMUNITION

Aerial Delivery 13C7-18
 Armament..... 11A
 Gun 11A13

AMPLIFIERS

Air Refueling System (See 8A1-65
 and 8D1-58)..... 6A2
 Aircraft and Missile Engine Fuel
 System 6J1
 Aircraft Reciprocating Engine Fuel
 System 6R11
 Alternating- and Direct-Current 8C17
 Alternating-Current..... 8A20
 Automatic Flight Control System..... 5A3
 Automatic Test..... 51T2
 Bombing System 11B2
 Box, Training Component 43X15
 Checkout, Missile..... 31X2-38
 Direct-Current..... 8D19
 Electronic Camera Control..... 10A6-3
 Engine and Temperature Instrument..... 5E3
 Fire Control System 11F4
 Flight Instrument..... 5F4
 Ground Communications, Missile 31X1-10
 Ground Guidance, Missile..... 31X7
 Guidance System 11G8
 Jet Engine Lubricating System..... 7J9
 Liquid-Level, Quantity, and Flow
 Measuring Instrument 5L2
 Navigation Instrument..... 5N2
 Position and Pressure Instrument 5P1
 Supercharger Control 2RA5-7
 Training Component..... 43X15
 Training Device..... 43DA11

ANALYTICAL SYSTEMS

Photographic 10H11

ANALYZERS

Automatic Test..... 51T3
 Bombing System 11B68
 Engine and Temperature Instrument..... 5E1-2
 Photographic Processing 10E24
 Training Component..... 43X49

ANNOUNCER

Simulator or Training Device 43DA3

ANTENNAS

Bombing System 11B3
 Fire Control System 11F5

ANTICIPATORS

Refrigeration, Temperature-Sensing..... 15A5-3

ARMAMENT EQUIPMENT

Bombing System 11B
 Chemical Warfare 11C
 Munitions, Bombs, Explosives..... 11A

ARMORED VEHICLES

Ordnance-Handling 36R2
 Vehicle 36A14

ASSEMBLY MACHINES, HOSE

Shop Support..... 34Y30

ASTRODOMES

Aircraft 13A11

ATMOSPHERIC RESEARCH EQUIPMENT

Meteorological-Electronic, Airborne 12M5
 Training Device..... 43D38

ATOMIC AND RADIOLOGICAL WARFARE

General 00-110A

ATTACHMENTS

Bombing System, Camera..... 11B49
 Propeller, Electrical..... 3EA7
 Radio Range, Training 43E7-4
 Training Component..... 43X20
 Vehicle, Construction, and Material-
 Handling..... 36Y2

ATTENUATORS

Fire Control System 11F54

AUGERS

Construction..... 36C1

AUTOMATIC TEST EQUIPMENT

Aircraft Engines 51E
 Computer Operated Test Station
 (COMETS)..... 51C
 Master Hardware..... 51T
 Modular Automatic Test 33
 Navigation Instrument..... 51N
 Radar 51P
 Radio..... 51R
 Versatile Automatic Test 51V

AUTOMOBILES

Vehicle 36A7

AUTOPILOT SYSTEMS

Flight Control..... 5A1-2

AUXILIARY METEOROLOGICAL-ELECTRONIC EQUIPMENT

Airborne..... 12M1
 Ground..... 31M1

AUXILIARY RADAR ELECTRONIC EQUIPMENT

Airborne..... 12P1
 Ground..... 31P1

AUXILIARY RADIO ELECTRONIC EQUIPMENT

Airborne..... 12R1
 Ground..... 31A1

AUXILIARY SPECIAL ELECTRONIC EQUIPMENT

Airborne.....12S1
Ground.....31S1

AUXILIARY WIRE FIXED ELECTRONIC EQUIPMENT

Ground..... 31W1

AXLES

Electrical Power Supply35CA17
Vehicle, Construction and Material-
Handling..... 36Y3

AZIMUTH ASSEMBLIES

Rotor 3R5

BAKING EQUIPMENT

Food Service 41B1

BALANCERS

Special Tool 32A1

BAROMETRIC ASSEMBLIES

Aircraft and Missile Engine Fuel
System.....6J2

BAROMETRIC METEOROLOGICAL-ELECTRONIC EQUIPMENT

Airborne..... 12M2
Ground Electronic..... 31M2

BARORESISTOR

Fire Control System 11F78

BARRIERS

Runup Fence 35E8-3
Runway..... 35E8-2

BATH AND SHOWER UNITS

Plumbing 40P1

BATTERIES

Electrical Equipment, DC8D2
Lighting and Electrical, Ground,
Handling..... 35F13
Vehicle, Construction, and Material-
Handling..... 36Y4

BATTERY CHARGERS

Power Supply, Electrical, Ground,
Handling..... 35C3-2

BEAM ASSEMBLIES

Loading and Servicing..... 35D14

BEARINGS

Engine, Nonaeronautical..... 38X1
Hardware..... 44B
Structural Component, Airframe..... 16W25

BELTS AND SHOULDER HARNESSSES

Aircraft Furnishing 13A1

BENCHES

Dust Free, Shop Support..... 34Y37

BENDING MACHINES

Shop Machinery, Metal-Forming..... 34G1-10

BEVERAGE UNITS

In-Flight Feeding 13B6

BINOCULARS

Optical Instrument 49A1

BINS

Loading and Servicing..... 35D11
Vehicle, Construction, and Material-
Handling..... 36Y5

BLADES

Propeller, Electrical.....3EA2
Propeller, Hydraulic 3HA1
Rotor Assembly 3R1
Vehicle, Construction, and Material-
Handling Component 36Y52

BLANKERS

Automatic Test Interference 51P7
Bombing System 11B55

BLASTING CAPS AND SQUIBS

Armament..... 11P5

BLOWERS

Bombing System 11B52
Cabin Heating..... 15H3
Direct-Current..... 8D18
Fire Control System 11F7
Missile Temperature Control..... 15M4
Refrigeration and Pressurization 15A3-4
Rotor Assembly 3R17
Utility Operating, Ground 35E11
Vehicle, Construction, and Material-
Handling Component 36Y53
Ventilating..... 40V1

BOATS

Aerial Delivery Kit 13C7-28
Watercraft 39

BODIES

Airborne Camera 10A2-2
Motion Picture Camera 10C11
Vehicle, Construction, and Material-
Handling..... 36Y6

BODY ASSEMBLIES

Structural Component, Airframe..... 16W9

BOILERS

Heating..... 40H1

BOMBING SYSTEMS AND EQUIPMENT

Armament..... 11B
Simulator or Training Device 43D1

BOMBS		
Armament.....	11A	
Chemical Warfare.....	11C2	
Explosive	11A1	
Guided	11K	
Incendiary.....	11A2	
Practice or Leaflet.....	11A3	
BOOMS		
Air Refueling System.....	6A3	
Egress System.....	11P11	
BOOST SELECTORS		
Supercharger Control	2RA5-10	
BOOSTERS		
Airborne Weapon	11W1-3	
Fire Control System	11F67	
BOOSTERS AND BURSTERS		
Armament.....	11A4	
BOOSTERS AND ROCKET ENGINES		
Liquid.....	2K-LR	
Missile, Associated.....	2KA	
Missile, Solid-Propellant	2K-SRM	
Solid	2K-SR	
BORESIGHTS		
Special Tool	32A2	
BORING MACHINES		
Metal Cutting, Shop Machinery	34C2-2	
Wood Cutting, Shop Machinery.....	34C4-9	
BORING TOOLS		
Special Tool	32A21	
BOTTLES		
Fire Control System	11F92	
Pressure, Pneumatic.....	9P1-2	
BOX ASSEMBLIES		
Battery.....	16W30	
Combination AC/DC	8C8	
Filter, Hydraulic Propeller.....	3HA10	
Gear, Rotor-Assembly.....	3R4	
BOXES		
Alternating-Current.....	8A24	
Automatic Flight Control	5A4	
Bombing System	11B5	
Combination AC/DC	8C19	
Direct-Current.....	8D25	
Electric Power Supply	35CA1	
Fire Control System	11F8	
Gear, Airborne-Mechanical	16G1	
Guidance System	11G5	
Junction, Missile-Operational.....	31XA7	
Liquid-Level, Quantity, and Flow Measuring Instrument	5L3	
Navigation Instrument.....	5N17	
BRACE ASSEMBLIES		
Strut.....	4SA6	
BRACKETS		
Photographic Reel.....	10H10	
BRAKES		
Airborne.....	10A2-6	
Jet Engine	2JA4	
Landing Gear	4B	
Landing Gear, Associated	4BA	
Line Installation	4SA4	
Rotor Assembly	3R10	
Shop Machinery, Metal-Forming.....	34G1-2	
Vehicle, Construction, and Material- Handling Component	36Y7	
BRAZING TOOLS		
Special Tool	32A26	
BREAKERS		
Special Tool.....	32A10	
Tire Repair, Shop Support	34Y9-6	
BREATHING UNITS		
Survival	14S5	
BRIDGES		
Aerial Delivery Kit	13C7-11	
Railroad	45E2	
BUCKETS		
Vehicle, Construction, and Material- Handling Component	36Y8	
BUFFETS		
In-Flight Feeding.....	13B4	
BUILDINGS		
Compressor.....	35E14	
Prefabricated, Utility-Operating.....	35E3	
BULK MATERIALS		
Aerial Delivery	13C7-39	
BULLDOZERS		
Vehicle, Construction, and Material- Handling Component	36Y9	
BUNGEE ASSEMBLIES		
Air Refueling System.....	6A16	
BUSES		
Vehicle	36A3	
CABINETS		
Electric Power Supply	35CA2	
Fire Control System	11F58	
Lighting and Electrical, Ground, Handling.....	35F1	
Shop Support.....	34Y33	

CABLE LAYING EQUIPMENT		
Construction	36C13	
CABLE UNITS		
Checkout, Missile	31X2-36	
CABLES		
Alternating-Current	8A23	
Battery, Vehicle, Construction, and		
Material-Handling	36Y4	
Electric Power Supply	35CA3	
Electrical, Power-Distribution, Missile	31X4-8	
Guidance and Control System	11G39	
Ignition, Turbojet and Turboprop	8E1-6	
Launcher	11LA10	
CABLEWAYS		
Loading and Servicing	35D1	
Loading and Servicing, Associated	35DA1	
CALCULATING MACHINES		
Office	46A	
CALIBRATION EQUIPMENT		
Optical	49A11	
CALIBRATION PROCEDURES		
Test	33K	
CALIBRATORS		
Airborne Camera	10A16	
Automatic Flight Control	5A5	
Bombing System	11B53	
Liquid-Level, Quantity, and Flow		
Measuring Instrument	5L4	
Special Tool	32A18	
CAMERAS		
Airborne, Aircraft	10A1	
Bombing System	11B71	
Component	10A2	
Ground	10B1	
Microfilm	10F1	
Motion Picture	10C1	
Motion Picture, Hand-Held	10C13	
Photographic Instrumentation	10L1	
Television, Fire-Control System	11F73	
CAMOUFLAGE EQUIPMENT		
Weapon	11WA2	
CANOPY ASSEMBLIES		
Structural Component, Airframe	16W2	
CAP ASSEMBLIES		
Fuel and Water	6J18	
Jet Engine	2JA7	
CAPACITORS		
Liquid-Level, Quantity, and Flow		
Measuring Instrument	5L23	
Relays, Airborne-Electrical System	8R11	
CAPSULE ASSEMBLIES		
Structural Component, Airframe	16W4	
CARBINES		
Ground Weapon	11W3-2	
CARBURETORS		
Aircraft Reciprocating Engine Fuel		
System	6R1	
Component, Vehicle, Construction	36Y61	
Engine Component, Nonaeronautical	38X2	
CARD ASSEMBLIES		
Training Component	43X52	
CARDS		
Training Device	43DA9	
CARGO LOADING, TIEDOWN, AND AERIAL		
DELIVERY EQUIPMENT		
Aircraft	13C	
CARRIAGE AND SHACKLE ASSEMBLIES		
Structural Component, Airframe	16W8	
CARRIERS		
Construction	36C32	
Ordnance	36R4	
Training	43E1	
Weapon, Aerial-Delivery	13C7-16	
CARS		
Passenger	36A7	
Railroad	45A1	
CARTRIDGES		
Egress System	11P7	
Fire Control System	11F96	
Munitions	11A24	
Structural Component, Airframe	16W16	
Strut, Aircraft-Landing-Gear	4SA10	
CARTS		
Fuel- and Oil-Handling	37A2	
Loading and Servicing	35D29	
Training (Tow Target)	43E17-3	
CASE ASSEMBLIES		
Airframe Structural Component	16W16	
CASES, CARRYING AND STORAGE		
Bombing System	11B76	
Photographic	10G16	
Utility Operating (Also see 35E20)	35E19	
CATAPULTS AND EJECTORS		
Egress Systems	11P1	
CEMENTS AND GLUES		
Dope, Paint, and Cleaning Compound	42A3	

CENTRAL SYSTEMS

Fire Control..... 11F10

CENTRIFUGE EQUIPMENT

Indoctrination Training..... 43D8-7

CHAIN AND HOOK ASSEMBLIES

Bombing System 11B87

CHAMBERS

Expansion..... 4BA10

Indoctrination Trainer..... 43D8-3

Shop Support..... 34Y43

Welding, Shop 34W9

CHANNEL ASSEMBLIES

Hydraulic, Aircraft and Missile..... 9H27

Propeller, Electrical..... 3EA15

CHARGERS

Airborne, Weapon 11W1-4

CHARGING PLANTS

Gas Generating..... 36G1

CHASSIS

Bombing System 11B82

Flight Instrument 5FA2

Guidance and Control System 11G40

Launcher..... 11LA11

Loading and Servicing..... 35DA16

Vehicle, Construction, and Material-
Handling Component 36Y10**CHECKOUT EQUIPMENT**

Electronic, Missile-Operational 31X2

CHEMICAL AND BIOLOGICAL WARFARE**AGENTS, DECONTAMINATING,
IMPREGNATING, PROTECTIVE AND
HAZARD DETECTING
EQUIPMENT**Chemical Warfare Agent, Explosive,
Gas or Weapon..... 11CDecontaminating, Impregnating, and
Protective 11D**CHEMICALS**

Biological and Radiological 43E22-2

Engine and Metal Treatment 42C2

Training..... 43E22

CHILLERS AND HEATERS

Photographic Processing 10E4

CHOCK ASSEMBLIES

Aircraft and Missile Handling..... 35B9

CHOPPERS

Photographic Processing 10E16

CHUTES

Airborne, Weapon 11W1-5

CIRCUIT ASSEMBLIES

Checkout, Missile..... 31X2-50

Indicator 11F24

Launch Control and Countdown,
Missile 31X3-28**CIRCUIT BREAKERS**

Switch 8S4

CIRCUIT CARD ASSEMBLIES

Guidance and Control System 11G42

CLAMPS

Aircraft Hose, Common-Hardware..... 44H3

Missile Support 35M35

Special Tool 32A27

CLEANERS

Motion Picture Camera 10C2

Shop Support..... 34Y2

CLEANING AND PURGING EQUIPMENT

Construction..... 36C35

Propellant Storage and Handling..... 37C9

Utility Operating 35E22

CLEANING AND SANITATION EQUIPMENT

Construction..... 36C35

Food Service 41B2

CLINOMETERS

Optical Instrument 49A15

CLOCKS

Timekeeping..... 49B1

Timepiece, Navigation-Instrument..... 5N11-2

CLOTHING

Personal..... 14P3

**CLOUD HEIGHT, DEPTH AND DIRECTIONS,
METEOROLOGICAL, AND ELECTRONIC
EQUIPMENT**

Ground..... 31M6

CLUTCHES

Airborne Camera, Magnetic..... 10A2-6

Automatic Flight Control System..... 5A43

Electric Power Supply 35CA13

Fire Control System 11F83

Rotor 3R8

Vehicle, Construction, and Material-
Handling Component 36Y11**COATERS**

Photographic, Motion Picture Camera 10C12

**COATING, CLEANING, AND SEALING
COMPOUNDS AND FUELS, GASES,
LUBRICANTS, CHEMICALS, AND
MATERIALS**

Chemical..... 42C

Cordage, Leather and Miscellaneous		
Fabric	42F	
Dope, Paint, or Cleaning Compound	42A	
Fuel, Lubricant, Oxygen, or Gas	42B	
Lumber	42L	
Metal, Plastic, or Composition		
Material	42D	
Rubber	42E	
COCKPIT PROCEDURES		
Training Device	43D3-5	
CODERS		
Fire Control System	11F89	
Photographic Processing	10E21	
COILERS		
Metal Forming, Shop Machinery	34G1-11	
COLLECTORS		
Dust, Air-Conditioning	40A3-2	
COLLIMATORS		
Optical Instrument	49A9	
COLUMNS		
Fire Control System	11F61	
COMMERCIAL FLEETS		
Vehicle	36A2	
COMMON HARDWARE EQUIPMENT		
Bearing	44B	
Hardware	44H	
COMMUNICATIONS		
Defense System, Special-Project	31Z4	
Missile, Ground-Electronic	31X1	
Training Device	43D37	
COMMUNICATIONS-RADIO-ELECTRONIC EQUIPMENT		
Airborne	12R2	
Ground	31R2	
COMPACTERS AND VIBRATORS		
Aircraft Furnishing	13A22	
Construction	36C34	
COMPARATORS		
Automatic Control System (See 5A3)	5A29	
Bombing System	11B7	
Fire Control System	11F79	
Photographic Projection	10D5	
COMPASSES		
Navigation Instrument	5N3	
Navigation Instrument, System	5N1-2	
Navigation, Optical	49C1	
COMPENSATORS		
Automatic Flight Control	5A6	
Bombing System	11B8	
Fire Control System	11F62	
Flight Instrument	5F18	
Hydraulic System, Aircraft or Missile	9H19	
Liquid-Level, Quantity, and Flow		
Measuring Instrument	5L5	
Navigation Instrument	5N4	
Position and Pressure Instrument	5P8	
COMPRESSED AIR SYSTEMS		
Fire Control System	11F11	
COMPRESSED GASES		
Fuel, Lubricant, Oxygen or Gas	42B4	
COMPRESSORS		
Air, Aerial-Delivery	13C7-15	
Air-Conditioning and Pressurizing	15A16	
Air, Shop Support	34Y1	
Air, (Vehicle)	36Y58	
Pneumatic System	9P4-3	
Propellant Storage and Handling	37C8	
Refrigeration	40R1	
Training Component	43X23	
COMPUTER DISPLAY UNITS		
Navigation, Automatic-Test	51N3	
COMPUTER SYSTEMS, ELECTRONIC EQUIPMENT		
Ground (See 43E26)	31S5	
COMPUTERS		
Automatic Flight Control	5A7	
Automatic Test, Flight-Control	51T28	
Bombing System	11B10	
Camera Control	10A6-7	
Checkout, Missile	31X2-74	
Digital, Training (See 31S5)	43E26	
Fire Control System	11F12	
Flight Instrument	5F5	
Flight Instrument Systems	5F1-2	
Ground Guidance, Missile	31X7-16	
Guidance and Control System	11G6	
Liquid-Level, Quantity, and Flow		
Measuring	5L18	
Navigation Instrument	5N5	
Training Component	43X35	
CONDENSING UNITS		
Refrigeration Equipment, Commercial	40R2	
CONDENSORS		
Liquid-Level, Quantity, and Flow		
Measuring Instrument	5L23	
CONDITIONERS		
Signal, Guidance	11G35	
CONDUIT INSTALLATIONS		
Strut, Shock-Absorbing	4SA5	
CONES		
Airborne Camera	10A2-3	

CONNECTORS, PLUGS, TERMINALS

Alternating-Current.....	8A4
Combination AC/DC	8C4
Direct-Current.....	8D4
Missile Support	35M33
Propellant Storage and Handling	37C10

CONSOLES

Launch Control and Countdown, Missile	31X2-3
Structural Component, Airframe.....	16W27

CONSTRUCTION EQUIPMENT

Vehicle, Construction, and Material- Handling.....	36C
---	-----

CONTACTORS (SEE RELAYS)

Airborne Electrical.....	8R
--------------------------	----

CONTAINERS

Aerial Delivery	13C4
Aircraft Furnishing	13A15
Bombing System	11B11
Fire Detection, Aircraft.....	13F6
Fuel- and Oil-Handling	37A3
Jet Engine (See 35E).....	2JA13
Shipping and Storage	35E20

CONTINUITY TESTERS

Test, Guided-Missile	33D9-101
----------------------------	----------

CONTROL AND GOVERNOR ASSEMBLIES

Jet Engine Power Plant	2JA6-3
------------------------------	--------

CONTROL ASSEMBLIES

Gas Turbine Engine	2GA1
Ground Guidance, Missile.....	31X7-3
Propeller, Hydraulic	3HA2
Propeller, Mechanical.....	3MA1
Rotor	3R2

CONTROL BOXES

Alternating-Current.....	8A24-4
Automatic Flight Control	5A4-4
Electrical Power Supply	35CA1-2

CONTROL COLUMN ASSEMBLIES

Structural Component, Airframe.....	16W38
-------------------------------------	-------

CONTROL PANELS

Air Field Lighting and Electrical	35F2
Aircraft Oxygen System.....	15X10

CONTROL, RADAR-ELECTRONIC EQUIPMENT

Airborne.....	12P2
Ground.....	31P2

CONTROL, RADIO-ELECTRONIC EQUIPMENT

Airborne.....	12R3
Ground.....	31R3

CONTROL, SPECIAL-ELECTRONIC EQUIPMENT

Ground.....	31S8
-------------	------

CONTROL SYSTEMS

Afterburner	2JA1
Automatic Flight.....	5A1
Cabin Pressure.....	8R5
Camera	10A6
Fire Control System	11F1
Fire Control System Relay.....	8R6
Guidance Control System.....	11G1
Jet Engine	2JA12
Propeller, Electrical.....	3EA3
Reciprocating Engine.....	2RA1
Supercharger.....	2RA5

CONTROL UNITS

Airborne Mechanical.....	16C1
Aircraft Fire Detection.....	13F5
Checkout, Missile.....	31X2-10
Electric Power Transfer, Ground Handling.....	35F18
Liquid-Level, Quantity, and Flow Measuring Instrument	5L14-6
Missile Support	35M10
Power Distribution, Missile	31X4-5
Shop Support.....	34Y42
Special Tool	32A29

CONTROL VALVES

Hydraulic Brake.....	4BA4
Supercharger Control	2RA5-11

CONTROLLERS

Alternating- and Direct-Current	8C3
Alternating-Current.....	8A3
Automatic Flight Control System.....	5A9
Automatic Test.....	51T4
Direct-Current.....	8D3
Fire Control System	11F14
Flight Instrument	5F28
System	8D3-34

CONTROLS

Air-Conditioning and Pressurizing.....	15A8
Air Field Lighting and Electrical	35F
Airborne Weapon	11W1-27
Automatic Flight.....	5A8
Bombing System	11B12
Brake System.....	4BA8
Camera	10A5
Electric Power Supply	35CA7
Emergency Hydraulic Power, Airborne-Mechanical	16C1-23
Fire Control System	11F13
Flight Control, Servo Mechanism.....	5A15-9
Flight Instruments	5F6
Fuel, Aircraft and Missile.....	6J3
Guidance System	11G7
Heating	15H6
Ice Eliminating	15E3
Jet Engine Regulator.....	7J5
Landing Gear	16C1-12

Launch Control and Countdown, Missile	31X3-10
Launcher.....	11L3
Liquid-Level, Quantity, and Flow Measuring Instruments	5L16
Loading and Servicing.....	35DA4
Missile Temperature.....	15M5
Navigation Instrument.....	5N6
Nozzle, Guidance-System	11G7-6
Photographic Processing	10E19
Pneumatic System, Aircraft or Missile.....	9P11
Position and Pressure Instrument	5P7
Propeller, Hydraulic	3HA2
Propeller, Mechanical.....	3MA1
Radio and Radar Training Device	43D7-9
Rotor Assembly	3R2
Surface, Guidance-System	11G7-2
Temperature, Air-Conditioning	15A5-2
Temperature, Photographic Kit.....	10G12
Throttle, Jet-Engine	2JA8
Training Component.....	43X43
Universal Camera System	10A6
CONVERTERS	
Alternating- and Direct-Current	8C11-8
Automatic Flight Control System.....	5A41
Automatic Test.....	51T5
Bombing System	11B13
Engine or Temperature Instrument.....	5E17
Fire Control System	11F15
Flight Instrument	5F14
Ground Guidance, Missile.....	31X7-14
Guidance and Control System	11G20
Liquid Oxygen, Oxygen System.....	15X2
Navigation Instrument.....	5N30
Polar, Bombing System	11B13-3
Power Supply, Electrical, Ground, Handling.....	35C1-4
Training Component.....	43X36
Utility Operating	35E29
CONVEYORS	
Construction.....	36C2
Loading and Servicing.....	35D2
Loading and Servicing, Associated.....	35DA2
COOKING EQUIPMENT	
Food Service	41B3
COOLERS	
Aircraft and Missile Engine Fuel System	6J17
Oil	35CA16
Refrigeration	40R3
Utility Operating, Ground	35E10
Water, In-Flight Feeding	13B7
COOLERS AND RADIATORS	
Aircraft and Missile Engine Fuel System	6J22

Hydraulic System, Aircraft and Missile	9H14
Jet Engine Lubricating System.....	7J1
Reciprocating Engine.....	7R1
COOLING SYSTEMS	
Airborne Camera	10A15
Missile Temperature Control.....	15M1
Reciprocating Engine.....	2RA2
COORDINATORS	
Propeller, Electric	3EA13
COPYING AND ENLARGING KITS	
Photographic	10G9
CORD ASSEMBLIES	
Fire Control System	11F16
Loading and Servicing.....	35D20
CORDAGE	
Cordage, Leather and Misc Fabric.....	42F
COUNTERBALANCE ASSEMBLIES	
Structural Component, Airframe.....	16W10
COUNTERMEASURES	
Armament.....	11A16
Automatic Test.....	51P5
Radar-Electronic, Airborne	12P3
Radar-Electronic, Ground	31P8
Radio and Radar Training Device	43D7-11
Radio-Electronic, Airborne	12R4
Special-Electronic, Ground.....	31S6
COUNTERPOISE ASSEMBLIES	
Structural Component, Airframe.....	16W18
COUNTERS	
Airborne Weapon	11W1-30
Checkout, Missile.....	31X2-12
Engine or Temperature Instrument.....	5E9
Flight Instrument	5F26
Liquid-Level, Quantity, and Flow Measuring Instrument	5L21
Navigation Instrument.....	5N22
Radiological Detecting.....	11H4-4
Special Tool	32A39
Training Component.....	43X8
COUPLER GROUPS	
Checkout, Missile.....	31X2-45
COUPLERS	
Automatic Flight Control System.....	5A28
Bombing System	11B15
Fire Control System	11F63
Flight Instrument	5FA1
Missile Operational	31XA3
Navigation Instrument.....	5N20
COUPLINGS	
Air Refueling System.....	6A15

Aircraft Common Hardware	44H1-2
Fuel-, and Oil-Handling	37A4
Hydraulic System, Aircraft and Missile	9H11
Pneumatic System	9P8
Quick Disconnect, Aircraft, and Missile Engine Fuel System	6J4
Reciprocating Aircraft and Engine Fuel System	6R9-11
Rocket Engine Fuel System	6K7
Rotor Assembly	3R16

COURSE REPEATERS

Servo Mechanism	5A15-10
-----------------------	---------

COVERS

Aircraft Furnishing	13A9
Bombsight	11B16
Structural Component, Airframe	16W37
Utility Operating, Protective	35E21

CRADLES

Loading and Servicing	35D6
-----------------------------	------

CRANES

Aerial Delivery Kit	13C7-24
Cargo Loading	13C1
Construction	36C3
Material Handling	36M1
Railroad	45E4

CRASH PROCEDURES

Aircraft, General	00-80C
-------------------------	--------

CRIMPING TOOLS

Standard Tool	32B19
---------------------	-------

CROSS-REFERENCE TABLES

Technical Order Index	0-4
-----------------------------	-----

CRUISE MISSILES

Multiple Launch, Surface- Attack	21M-BGM
---	---------

CRYSTAL UNITS

Airborne Electronic	12C
---------------------------	-----

CRYPTOGRAPHIC EQUIPMENT

Nonstandard	31S12
-------------------	-------

CUBICLES

Lighting and Electrical, Ground, Handling	35F3
Vehicle, Construction and Material- Handling Component	36Y38

CUTTERS

Egress System, Personnel Ejection	11P12
Microfilm	10F4
Special Tool	32A33

CUTTING MACHINES

Shop Machinery	34C
----------------------	-----

CYLINDERS

Air Refueling System	6A20
Aircraft and Missile Engine Fuel System	6J27
Automatic Flight Control System	5A39
Brake System	4BA1
Gas Storage and Servicing	42B5
Hydraulic System, Aircraft or Missile	9H2
Launcher	11LA2
Loading and Servicing (See 35DA3-3)	35DA13
Missile Support	35M17
Pneumatic System, Aircraft or Missile	9P2
Rotor Assembly	3R13
Supply, Oxygen System	15X1
Training Components	43X24
Training Device	43DA8
Vehicle, Construction, and Material- Handling Component	36Y49

CYLINDERS AND ACTUATORS

Main Landing Gear, Hydraulic- System	9H2-2
---	-------

DAMPERS

Hydraulic System, Aircraft or Missile	9H13
Rotor Control	3R2-2
Shimmy, Strut	4SA1
Steering, Strut	4SA2
Yaw, Automatic Flight Control	5A1-5

DARKROOM KITS

Photographic	10G1
--------------------	------

DASHPOT ASSEMBLIES

Structural Component, Airframe	16W17
--------------------------------------	-------

DATA DISPLAY SETS

Airborne Camera	10A10
-----------------------	-------

DATA PRESENTATION

EQUIPMENT	
Radar, Bombing System	11B31-3

DATA PROCESSING EQUIPMENT

Airborne, Special-Electronic	12S2
Ground, Special-Electronic	31S5

DATA TERMINALS

Training Component	43X44
--------------------------	-------

DECELERATION DEVICES

Automatic Release, Parachute	14D2
Cargo	14D4
Parachute	14D1
Recovery Parachute	14D3

DECODERS

Fire Control System	11F89
Launch Control and Countdown, Missile	31X3-27

DECONTAMINATING, IMPREGNATING AND PROTECTIVE EQUIPMENT

Decontaminating.....	11D1
Impregnating.....	11D2
Protective.....	11D3
Utility Operating	35E17
Utility Operating, Associated	35EA7

DECONTAMINATION SYSTEMS

Airbase Utility, Associated.....	35EA7
----------------------------------	-------

DECOYS

Vacuum System	9V3
---------------------	-----

DECREASERS AND PUMPS

Gear Box Assembly.....	3R4-5
------------------------	-------

DEFROSTERS AND HEATERS

Direct-Current.....	8D8
---------------------	-----

DEGREASER

Shop Support.....	34Y3
-------------------	------

DEHUMIDIFIERS

Air-Conditioning	40A2
Air-Conditioning and Pressuring.....	15A18
Photograph Processing	10E1
Photographic Kit.....	10G2

DEHYDRATORS

Air-Conditioning and Pressurizing.....	15A14
Construction.....	36C8
Navigation	5N33
Pneumatic System, Aircraft or Missile.....	9P3
Utility Operating	35E28
Wrapping and Packaging, Shop Support.....	34Y11-2

DEICING SYSTEMS

Propeller, Electrical.....	3EA4
Propeller, Hydraulic	3HA3
Utility Operating	35E17

DEMINERALIZERS

Water Treating.....	40W1
---------------------	------

DEMODULATORS

Automatic Flight Control System.....	5A27
Bombing System	11B74
Checkout, Missile.....	31X2-61
Fire Control System	11F84

DEMOLITION MATERIALS

Armament.....	11A20
---------------	-------

DENSENSITIZER

Automatic Flight Control System.....	5A48
--------------------------------------	------

DENSITOMETERS

Radiological Detecting.....	11H4-5
-----------------------------	--------

DEPLOYMENT GUN (DROGUE)

Egress System.....	11P15
--------------------	-------

DERRICKS

Construction.....	36C4
-------------------	------

DESCALING MACHINES

Shop Support.....	34Y40
-------------------	-------

DESICCATORS

Bombing System	11B17
Fire Control System	11F17

DETECTORS

Air-Conditioning and Pressurizing.....	15A12
Aircraft and Missile Engine Fuel System.....	6J26
Automatic Flight Control System.....	5A40
Biological	11H1
Chemical.....	11H2
Fire, Aircraft.....	13F1
Fire Control System	11F50
Flight Instrument	5F20
Guidance and Control System	11G32
Hazard Detecting.....	11H
Industrial Hazard	11H5
Liquid-Level, Quantity, and Flow Measuring Instrument	5L22
Mine	11H3
Navigation Instrument.....	5N23
Night Photo	10A7-4
Photographic, Camera Control System.....	10A6-9
Radiological	11H4
Skid.....	4BA2
Smoke, Aircraft.....	13F2
Special Electronic	31S9
Special Tool	32A17
Utility Operating, Leak.....	35E24

DEVELOPERS

Photographic Kit.....	10G3
Photographic Processing	10E2

DIGITAL UNITS

Checkout, Missile.....	31X2-32
Electronic.....	8C3-19

DIMPLING MACHINES

Shop Support.....	34Y22
-------------------	-------

DIRECT CURRENT SYSTEMS

Airborne Electrical.....	8D
--------------------------	----

DISCONNECT ASSEMBLIES

Aircraft Furnishing	13A12
Oxygen System	15X13
Rocket Engine Fuel System.....	6K7
Servo Mechanism, Automatic-Flight.....	5A15-6
Static, Air-Refueling System.....	6A7

DISCONNECT UNITS

Training Component.....	43X19
-------------------------	-------

DISCONNECTS

Electrical, Direct-Current	8D20
----------------------------------	------

DISCRIMINATORS

Guidance and Control System 11G34

DISCS

Fire Detection System, Aircraft 13F10

DISHWASHERS

Food Service 41B2-2

DISINTEGRATING MACHINES

Metal Cutting, Shop Machinery 34C2-13

DISPENSERS

Flare, Armament 11A21

Fuel- and Oil-Handling 37A

DISPLAY UNITS

Bombing System 11B79

Engine or Temperature Instrument 5E19

Fire Control System 11F98

Navigation Instrument 5N29

Refrigerating 40R4

Training Component 43X3

DISTILLATION EQUIPMENT

Water Treating 40W2

DISTRIBUTION ASSEMBLIES

Guidance and Control System 11G37

DISTRIBUTION BOXES

Alternating Current 8A24-2

Combination AC/DC 8C19-2

DISTRIBUTORS

Construction 36C5

Engine Component, Nonaeronautical 38X3

Photographic Processing 10E15

DITCHERS

Construction 36C6

DOCKS

Aircraft or Missile Maintenance and

Inspection 35A1

Loading and Servicing 35D9

DOLLIES (ALSO SEE TRUCKS AND TRAILERS)

Loading and Servicing 35D3

Loading and Servicing, Associated 35DA3

Vehicle 36A4

DOOR ASSEMBLIES

Structural Component, Airframe 16W3

DOORS

Missile Support 35M37

DOPE, PAINTS AND CLEANING COMPOUNDS

Cleaning Compound 42A1

Dope or Paint 42A2

Glue and Cement 42A3

DOPPLER DRIFT GROUPS

Bombing System 11B18

DOSIMETERS

Radiological Detecting 11H4-6

DRAIN SYSTEMS

Airborne Engine 2JA14

DRAWERS

Checkout, Missile 31X2-69

DRIFTMETERS

Navigation Instrument 5N7

DRILL ATTACHMENTS

Standard Tool 32B17

DRILL PRESSES

Metal Cutting, Shop Machinery 34C2-3

DRILLERS, WELL

Construction 36C29

DRILLS

Construction 36C7

Standard Tool 32B2

DRIVE ASSEMBLIES

Fire Control System 11F90

Loading and Servicing 35DA15

Missile Support 35M28

DRIVE UNITS

Air Refueling System 6A13

Automatic Flight Control System 5A34

DRIVER TRAINING

Training Device 43D10

DRIVERS

Training Device 43DA12

DRIVES

Airborne Mechanical 16G2

Electric Power Supply 35CA11

Gun, Airborne Weapon 11W1-28

Hydraulic System, Aircraft or Missile 9H28

Missile Support 35M28

Pneumatic System 9P7

Training Component 43X21

Transmission, Hydraulic 9H6-5

DROGUE

Air Refueling System 6A21

DROGUE GUNS (DEPLOYMENT)

Egress System 11P15

DRONES, TARGET

Armament 11A22

Drone Missile 12R7

DRUM ASSEMBLIES

Rotor 3R10

DRUM AND BRACKET ASSEMBLIES

Servo Mechanism, Automatic-Flight..... 5A15-2

DRUMS

Metal Cutting, Shop Machinery 34C2-14

DRYERS

Construction 36C8

Photographic Processing 10E3

Pneumatic System 9P3

Shop Support..... 34Y41

DRYING KITS

Photographic 10G4

DRYING UNITS

Loading and Servicing..... 35D17

DUCT ASSEMBLIES

Fire Control System 11F80

Load, Missile-Ground-Operational 31XA16

Structural Component, Airframe..... 16W14

DUPLICATING EQUIPMENT

Office 46D

Photographic Processing 10E34

DYNAMOTORS

Alternating- and Direct-Current 8C5

Bombing System 11B70

Direct-Current..... 8D5

EASELS

Photographic Processing 10E17

EDITORS AND VIEWERS

Motion Picture Camera 10C3

EGRESS SYSTEMS, EXPLOSIVE DEVICES

Armament..... 11P

EJECTION SEAT GUIDE RAILS AND TRACK ASSEMBLIES

Aircraft Furnishing 13A8

EJECTORS

Air-Conditioning and Pressurizing..... 15A13

Airborne Electrical, AC 8A18

Aircraft and Missile Engine Fuel
System 6J19

Bombing System 11B59

Cartridge, Photoflash..... 10A7-3

Egress System..... 11P2

Ice Eliminating 15E9

Launcher..... 11LA5

Photographic Processing Sets 10E26

Special Tool 32A28

Ventilation, Airframe Structural

Component 16W31

ELECTRICAL CIRCUIT INSTRUMENTS

Airborne Instrument 5M

ELECTRICAL FACILITIES

General 00-105A

ELECTRICAL SYSTEMS AND EQUIPMENT

Alternating-Current..... 8A

Combination AC/DC 8C

Direct-Current..... 8D

Ignition System, or Component..... 8E

Relay, Solenoid, or Contactor..... 8R

Switch 8S

ELECTROMAGNETIC UNITS

Alternating-Current..... 8A28

ELECTROMECHANICAL COMPUTERS

Amplifier, Automatic-Flight-Control..... 5A7-4

ELECTRONIC CIRCUIT PLUG-IN UNITS

Automatic Test..... 51T27

ELECTRONIC CLUTTER SETS

Fire Control System 11F77

ELECTRONIC EQUIPMENT, AIRBORNE

Meteorological 12M

Radar 12P

Radio 12R

Special..... 12S

Special, Auxiliary..... 12S1

Synchro or Resolver..... 12A

ELECTRONIC EQUIPMENT, GROUND

Ground Defense System..... 31Z

Meteorological Electronic System..... 31M

Missile Operational 31X

Radar Electronic 31P

Radio Electronic 31R

Special Electronic 31S

Wire Fixed..... 31W

**ELECTRONIC EQUIPMENT,
METEOROLOGICAL**

Airborne..... 12M

Ground..... 31M

ELEVATORS

Material-Handling 36MA2

ENCODERS

Airborne Camera 10A14

Navigation Instrument..... 5N27

ENGINES, AIRBORNE

Booster and Rocket..... 2K

Gas Turbine..... 2G

Jet 2J

Reciprocating..... 2R

**ENGINES AND COMPONENTS,
NONAERONAUTICAL**

Engine Component or Accessory 38X

Marine Engine 38M

Powered Ground 38G

Vehicle Engine	38V
ENGINES, TRAINING	
Simulator or Training Device	43D12
ENGRAVING MACHINES	
Shop Support.....	34Y35
ENLARGERS	
Microfilm	10F2
ERASING DEVICES	
Special Tool	32A36
ERECTION EQUIPMENT	
Missile Support	35M2
Missile Support, Associated	35MA2
ERECTORS	
Utility Base Operating	35E16
ETCHERS	
Standard Tool.....	32B15
EVALUATORS	
Bombing System	11B83
Fire Control System	11F85
EXCAVATORS	
Construction	36C37
EXCITERS	
Auxiliary Power Unit	8E3-2
Ignition, Turbojet and Turboprop.....	8E1-8
EXERCISERS	
Checkout, Missile.....	31X2-55
EXHAUST ASSEMBLIES	
Reciprocating Engine.....	2RA9
EXHAUST VALVES	
Structural Component, Airframe.....	16W28
EXHAUSTERS	
Welding and Heat, Shop Machinery	34W5
EXPANSION CHAMBERS	
Brake System.....	4BA10
EXPLOSIVES	
Aircraft Stores Jettisoning, Aircraft	
Starting, or Related Device	11A18
Armament.....	11A
Chemical Warfare	11C
Device, Target Drone, or Special	
Purpose Aircraft	11A22
Egress System Kits.....	11P19
Missile Components.....	11A15
EXPORT	
General	00-80AA
EXTENSIONS	
Hydraulic System, Aircraft or Missile	9H25

EXTRACTORS	
Special Tool	32A23
FABRICS	
Cordage, Leather, and Misc Fabric	42F
FACILITY TECHNICAL ORDERS	
Ground Defense System	31Z3
FACSIMILE, SPECIAL-ELECTRONIC EQUIPMENT	
Ground.....	31S2
FAN ASSEMBLIES	
Direct-Current.....	8D18
Electric Power Supply	35CA5
Lubricating System, Jet-Engine	7J15
Lubricating System, Reciprocating-Engine	7R10
Rotor	3R8
Refrigeration	15A3-4
FANS AND BLOWERS	
Air Field Lighting and Electrical	35F17
Airborne Electrical System, AC.....	8A21
Airborne Electrical System, DC.....	8D18
Guidance and Control System	11G23
Ice Eliminating	15E7
Missile Temperature Control.....	15M4
Utility Operating, Ground	35E11
Ventilating.....	40V2
FEEDERS	
Airborne Weapon	11W1-7
Vehicle, Construction, or Material-	
Handling Component	36Y12
FEEDING EQUIPMENT	
In-Flight	13B
FIBER OPTIC	
Ground Special-Electronic.....	31S11
FILL UNITS	
Loading and Servicing.....	35D18
FILM FINISHING EQUIPMENT	
Photographic Processing	10E32
FILM MAGAZINES	
Airborne Camera	10A2-4
FILM TITLERS	
Photographic, Motion-Picture	10C9
FILTER ASSEMBLIES	
Gas Generating.....	36G2
Loading and Servicing.....	35DA9
FILTER BOX ASSEMBLIES	
Propeller, Hydraulic	3HA10
FILTERING EQUIPMENT	
Propellant Storage and Handling.....	37C6

Water Treating.....	40W6
FILTERS	
Airborne Electrical, AC/DC.....	8C22
Air-Conditioning and Pressurizing.....	15A6
Aircraft Reciprocating Engine Fuel System.....	6R2
Automatic Flight Control.....	5A10
Bombing System.....	11B92
Electric Power Supply.....	35CA14
Engine Component, Nonaeronautical.....	38X4
Fire Control System.....	11F18
Flight Instrument.....	5F7
Hydraulic System, Aircraft or Missile.....	9H3
Jet Engine Lubricating System.....	7J2
Missile Support.....	35M15
Pneumatic System, Aircraft or Missile.....	9P6
Reciprocating Engine Lubricating System.....	7R2
Refrigeration.....	15A6
Utility Operating.....	35E28
Vacuum System, Aircraft or Missile.....	9V4
Vehicle, Construction, or Material- Handling Component.....	36Y40
Water, Shop Support.....	34Y18
FILTERS AND NETWORKS	
Checkout, Missile.....	31X2-71
FILTERS AND RESTRICTIONS	
Hydraulic System.....	9H3
FILTERS AND STRAINERS	
Aircraft or Missile Engine Fuel System.....	6J5
Aircraft Reciprocating Engine Fuel System.....	6R2
FINISHERS	
Construction.....	36C15
FINISHING MACHINES	
Shop Machinery.....	34F
FINS, BOMB	
Armament.....	11A6
FIRE CONTROL SYSTEMS AND EQUIPMENT	
Armament.....	11F
FIRE DETECTION SYSTEMS	
Aircraft.....	13F1
FIRE FIGHTING EQUIPMENT	
Air and Missile Base Utility Operating.....	35E1
Aircraft Fire Extinguisher.....	13F
FIRE PROTECTION AND RESCUE	
General.....	00-105E
FIRE PROTECTION AND SAFETY SHELTERS	
Utility Operating.....	35EA3

FIRING MECHANISMS	
Egress System.....	11P8
FIRING TABLES	
Weapon.....	11WA1
FIRST AID KITS	
Aircraft Furnishing.....	13A3
FIXED, WIRE-ELECTRONIC EQUIPMENT	
Ground.....	31W
Ground, Auxiliary.....	31W1
FIXTURE ASSEMBLIES	
Loading and Servicing.....	35D25
FIXTURES	
Special Tools.....	32A6
FLAME THROWERS	
Armament.....	11C4
FLARE BOX ASSEMBLIES	
Structural Component, Airframe.....	16W20
FLARES	
Dispenser.....	11A21
Munitions.....	11A10
FLARING MACHINES	
Metal Forming, Shop Machinery.....	34G1-9
FLASH UNITS	
Photographic Ground Cameras.....	10B3
FLASHLIGHTS	
Lighting and Electrical, Ground, Handling.....	35F5-9
FLIGHT CONTROL COMPUTERS	
Automatic Flight.....	5A7-3
FLIGHT CONTROL SYSTEMS	
Automatic Flight Control.....	5A
Flight Instrument.....	5F1-4
FLIGHT SIMULATORS	
Training Device.....	43D3
Training Systems, Automated.....	43DA14
FLOAT	
Aircraft Landing Gear.....	4A
FLOTATION ASSEMBLIES (BAG)	
Survival.....	14S8
FOCATRONS	
Photographic Processing.....	10E29
FOOD SERVICE EQUIPMENT	
In-Flight Feeding.....	13B
Subsistence and Food Service.....	41B
FOOD STORAGE UNITS	
In-Flight Feeding.....	13B2

FORGES	
Welding and Heat Treating	34W6
FORK LIFTS	
Material-Handling	36MA1
FORMS	
Blank	00-35D
FORMING MACHINES	
Shop Machinery	34G
FORWARD HUB	
Rotor Assembly	3R1-7
FRAMES	
Bombing System	11B78
Missile Shipping	35E25
FREEWHEEL UNITS	
Rotor Assembly	3R15
FREEZERS	
Air and Missile Base Utility	
Operating	35E9
FRONT LENGTH TOOLS	
Special Tool	32A40
FRYERS	
Gas, Food-Service	41B3-4
FUEL-, OIL-, AND PROPELLANT-HANDLING EQUIPMENT	
Fuel- and Oil-Handling	37A
Propellant Storage and Handling	37C
FUEL SYSTEMS, AIRCRAFT AND MISSILE	
Air Refueling System	6A
Offensive System	6S
Purging System	6P
Reciprocating Engine	6R
Rocket Engine	6K
Turbojet and Turboprop	6J
FUELS	
Fuel, Lubricant, Oxygen, and Gas	42B
FURNACES	
Heating	40H2
Welding and Heat Treating, Shop	
Machinery	34W
FURNISHINGS	
Aircraft	13A
FUZE BOXES	
Bombing System	11B5-6
FUZES	
Bomb	11A7
Egress System	11P16
GAS GENERATING EQUIPMENT	
Filter Assembly	36G2
Generating or Charging Plant	36G1
GAS SERVICING UNITS	
Missile Support	35M7-5
GAS STORAGE AND SERVICING CYLINDERS	
Fuel, Lubricant, Oxygen and Gas	42B5
GAS TRANSFER AND STORAGE	
Shop Support	34Y14
GASES	
Chemical Warfare	11C5
Fuel, Lubricant, Oxygen, and Gas	42B
GATES, ELECTRONIC	
Bombing System	11B60
GAUGES	
Engine or Temperature Instrument	5E4
Liquid-Level, Quantity, and Flow	
Measuring Instrument	5L17
Loading and Servicing	35DA11
Missile Support	35M24
Oxygen System	15X3
Position and Pressure Instrument	5P2
Propellant Storage and Handling	37C11
Special Tool	32A19
Standard Tool	32B3
Training Component	43X55
Vehicle, Construction, and Material-	
Handling Component	36Y13
GEAR ASSEMBLIES	
Arresting	16W33
GEAR BOX ASSEMBLIES	
Airborne Mechanical	16G1
Airborne Mechanical, Associated	16GA
Rotor	3R4
Training Component	43X32
GEAR REDUCER ASSEMBLIES	
Loading and Servicing	35DA10
GEARS	
Airborne Engine	2JA16
Engine Component, Nonaeronautical	38X5
Steering	36Y60
GENERAL TECHNICAL ORDERS (SEE TECHNICAL ORDERS, GENERAL)	
GENERATING PLANTS	
Gas Generating	36G1
GENERATOR SETS	
Aerial Delivery Kit	13C7-40
Missile, Engine-Driven	35C2-3
GENERATORS	
Airborne, Weapon	11W1-9
Aircraft Oxygen System	15X19
Automatic Test	51T6
Bombing System	11B19

Checkout, Missile.....	31X2-9	GREASES	
Chemical Warfare	11C12	Fuel, Lubricant, Oxygen or Gas	42B3
Combination AC/DC	8C6	GRENADERS	
Egress System.....	11P9	Launcher, Weapon.....	11W3-9
Electric Circuit Instrument.....	5M3	Warfare Agent.....	11C7
Electric Power Supply	35C2	GRIDDLES	
Electric Power Supply, Associated	35CA21	Food Service	41B3-5
Engine and Temperature Instrument.....	5E5	GRINDERS	
Engine Component, Nonaeronautical	38X6	Metal Finishing, Shop Machinery	34F2-2
Engine Driven, AC.....	8A6	Standard Tool.....	32B4
Fire Control System	11F30	GRINDING DEVICES	
Guidance and Control System.....	11G24	Special Tool	32A14
Hydraulic, Aircraft and Missile.....	9H23	GRIP ASSEMBLIES	
Hydrogen, Gas-Generating Plant	36G1-3	Fire Control System	11F19
Launcher.....	11LA4	Jet Engine	2JA9
Motor, AC	8A7	GROOVING MACHINES	
Motor, AC/DC.....	8C7	Metal Forming, Shop Machinery.....	34G1-8
Motor, DC.....	8D7	GROUND DEFENSE SYSTEMS	
Motor, Fire-Control System	11F30	Ground Electronic.....	31Z
Motor (Inverter)	8R2	GROUND GUIDANCE EQUIPMENT	
Motor, Power-System, Training.....	43E6-6	Missile Operational	31X7
Motor, Shop Support	34Y28	GROUND HANDLING, SUPPORT, AIR, AND	
Purging System.....	6P2	MISSILE BASE OPERATING EQUIPMENT	
Rotor	3R9	Air and Missile Base Utility	
Starter, Airborne-Electrical, AC/DC.....	8C13	Operating	35E
Starter, Direct-Current Airborne		Aircraft and Missile Inspection and	
Electrical	8D13	Maintenance	35A
Starter, Jet-Engine	2JA15	Aircraft and Missile Handling and	
Strut.....	4SA9	Weighing	35B
Training.....	43E4	Aircraft Ground Support.....	35G
Training Component.....	43X40	Electric Power Supply	35C
Turbojet and Turboprop Ignition		Lighting and Electrical, Air-Field	35F
System.....	8E1-11	Loading and Servicing.....	35D
GIMBAL ASSEMBLIES		Missile Support.....	35M
Guidance and Control System	11G15	GROUND WEAPONS	
Missile Support	35M38	Armament.....	11W2
Navigation Instrument.....	5N35	GUIDANCE AND CONTROL SYSTEMS	
GLARESHIELD ASSEMBLIES		Armament.....	11G
Structural Component, Airframe.....	16W42	Training Device.....	43D17
GLIDE WEAPONS		GUIDED GLIDE WEAPONS	
Guided, Air-Launched	11K	General	11K-1
GLUES AND CEMENTS		GUIDED-MISSILE EXPLOSIVE COMPONENTS	
Dope, Paint, or Cleaning Compound.....	42A3	Ammunition	11A15
GOVERNORS		GUIDED-MISSILES	
Aircraft and Missile Engine Fuel		Air Launch, Decoy	21M-ADM
System	6J7	Air Launch, Intercept.....	21M-AIM
Engine Component, Nonaeronautical	38X7	Air Launch, Surface-Attack	21M-AGM
Missile Support, Speed Reducer	35M31	Coffin Launched, Drone	21M-CQM
Propeller, Electric	3EA5	Multiple Launch, Drone	21M-BQM
Propeller, Hydraulic	3HA4	Multiple Launch, Surface-Attack	21M-BGM
Supercharger Control	2RA5-5	Silo Launch, Surface-Attack	21M-LGM
GRADERS			
Construction	36C9		

GUNNERY TRAINING

Simulator and Training Device 43D4

GUNS

Deployment (Drogue)..... 11P15

Heavy Caliber, Airborne-Weapon..... 11W1-12

Heavy Caliber, Ground-Weapon..... 11W2-5

Light Caliber, Airborne-Weapon 11W1-13

Light Caliber, Ground-Weapon..... 11W2-6

Special Tool..... 32A4

GUNSHIP SYSTEMS

Training..... 43E30

GYROSCOPES

Automatic Flight Control

(See 5A32-2)..... 5A11

Bombing System..... 11B20

Camera 10A3

Fire Control System 11F20

Guidance and Control System..... 11G11

Navigation Instrument..... 5N18

HAMMERS

Standard Tools..... 32B6

HANDLES

Fire Control System 11F74

HANDLING AND WEIGHING EQUIPMENT

Aircraft..... 35B

HANDLING EQUIPMENT

Aircraft Ground Support..... 35G5

Chemical Warfare..... 11C8

Fuel, Oil, and Propellant..... 37

Missile and Component..... 35M4

HANGERS

Rotor Assembly..... 3R21

HARDWARE AND RELATED EQUIPMENT

Aircraft Common Hardware..... 44H1

Aircraft Hose Clamp 44H3

Utility Hardware 44H2

HARNESS ASSEMBLIES

Belt, Safety or Shoulder..... 13A1

Electrical, Direct-Current 8D22

Ignition, Reciprocating-Engine 8E2-4

Ignition, Turbojet and Turboprop..... 8E1-9

Jet Engine 2JA11

HARNESS RELEASES

Egress System..... 11P20

HARVEST EAGLE

General 00-105K

HAZARD DETECTING EQUIPMENT

Armament..... 11H

HEADREST ASSEMBLIES

Aircraft Furnishing..... 13A16

HEADS

Fire Control System 11F21

Rotor Assembly..... 3R1-4

HEADSETS

Ground Communications, Missile 31X1-12

HEAT EXCHANGERS

Aircraft Oxygen System..... 15X17

Missile Temperature Control..... 15M3

Pneumatic System, Aircraft or Missile..... 9P9

Refrigeration 15A4

HEAT TREAT EQUIPMENT

Shop Machinery..... 34W

HEATERS

Aircraft and Missile Engine Fuel

System..... 6J24

Cabin..... 15H1

Construction..... 36C10

Direct-Current..... 8D8

Engine Component, Nonaeronautical 38X22

Fire Control System 11F59

Heating, Commercial..... 40H3

Jet Engine Lubricating System..... 7J3

Photographic Processing 10E4

Propellant Storage and Handling..... 37C7

Reciprocating Engine Lubricating

System..... 7R3

Utility Operating 35E7

Vehicle, Construction, and Material-

Handling Component 36Y15

HEATING EQUIPMENT

Aircraft and Missile, Cabin 15H

Commercial 40H

Special Electronic, Airborne..... 12S3

HEIGHT FINDERS

Photographic Interpretation 10H1

HEIGHT FINDING RADAR ELECTRONIC EQUIPMENT

Airborne..... 12P6

Ground..... 31P3

HIGH ENERGY LIQUID PROPELLANT

Fuel, Lubricant, Oxygen, or Gas 42B7

HOISTS

Cargo Loading..... 13C1

Launcher..... 11LA3

Loading and Servicing..... 35D4

Vehicle, Construction, and Material-

Handling Component 36Y16

HONES

Metal Finishing, Shop Machinery..... 34F2-3

HOOKS, CARGO

Cargo Loading, Tiedown and Aerial
Delivery 13C9

HOSE AND REEL ASSEMBLIES

Air Refueling System..... 6A8

HOSE ASSEMBLIES

Aircraft Oxygen System..... 15X18

Missile Propellant..... 37C4

HOSES

Aircraft, Rubber Material..... 42E1

Fire Control System 11F94

Fuel- and Oil-Handling 37A5

HOUSING ASSEMBLIES

Rotor 3R12

HUB ASSEMBLIES

Friction Release Servo Mechanism 5A15-7

Propeller, Electrical.....3EA6

HUMIDIFIERS

Training Component..... 43X57

HYDRAULIC MOTORS

Electric Power Supply35CA15

HYDRAULIC SYSTEMS AND EQUIPMENT

Aircraft and Missile9H

Missile Support..... 35MA1

ICE ELIMINATING EQUIPMENT

Aircraft and Missile 15E

ICE MAKERS

Refrigerating..... 40R6

**IDENTIFICATION, FRIEND-OR-FOE, RADAR-
ELECTRONIC EQUIPMENT**

Airborne..... 12P4

Ground..... 31P4

IGNITERS

Munitions 11A23

Spark Plug, Turbojet and Turboprop..... 8E1-3

**IGNITION SYSTEMS AND COMPONENTS,
ELECTRICAL**

Airborne Electrical System 8E

Auxiliary Power Unit 8E3

Nonaeronautical Engine..... 38X20

Reciprocating Engine..... 8E2

Turbojet and Turboprop 8E1

IGNITION UNITS

Cabin Heating..... 15H4

IMPELLERS

Cabin Heating..... 15H7

IMPREGNATING EQUIPMENT

Bombing System 11D2

Plant 11D2-3

INCINERATORS

Shop Machinery 34W1

INDEXES

Alphabetical0-2

Cross-Reference Table0-4

Technical Order0-1

INDEXERS

Flight Instrument 5F24

INDICATORS

Air-Conditioning and Pressurizing..... 15A20

Air Refueling System..... 6A4

Alternating-Current..... 8A26

Automatic Flight Control 5A12

Bombing System 11B21

Checkout, Missile..... 31X2-47

Electrical Circuit Instrument 5M2

Engine and Temperature Instrument 5E6

Fire Control System 11F23

Flight Instrument 5F8

Jet Engine Lubricating System..... 7J11

Liquid-Level, Quantity, and Flow

Measuring, Missile-Support..... 35M20-3

Measuring Instrument 5L6

Missile Alignment, Loading and

Servicing..... 35DA7

Missile Support..... 35M12

Navigation, Optical..... 49C2

Navigation Instrument..... 5N8

Oxygen System 15X4

Position and Pressure Instrument 5P3

Training Component..... 43X5

Wind, Lighting and Electrical,

Ground-Handling..... 35F12

**INDOCTRINATION TRAINERS AND
CHAMBERS**

Training Devices 43D8

INDUSTRIAL HAZARDS

Detecting 11H5

IN-FLIGHT FEEDING EQUIPMENT

Aircraft..... 13B

Food Storage Unit..... 13B2

Food Warming Oven..... 13B1

INFRARED ASSEMBLIES

Bombing System 11B94

INITIATORS

Egress System..... 11P3

Rocket Engine Fuel System..... 6K9

INJECTION SYSTEMS

Aircraft Reciprocating Engine Fuel

System 6R3

Fuel Injection 6R4

INJECTORS

Engine Component, Nonaeronautical 38X24

INLETS

Air 2JA2

INSERTERS

Checkout, Missile 31X2-62

INSIDE PLANT, WIRE FIXED-ELECTRONIC EQUIPMENT

Ground 31W2

INSPECTION AND AGE CONTROL OF USAF EQUIPMENT

General 00-20K

INSPECTION AND MAINTENANCE EQUIPMENT

Aircraft and Missile 35A

INSTRUMENT ASSEMBLIES

Checkout, Missile 31X2-73

INSTRUMENT FLYING EQUIPMENT

Training Device 43D5

INSTRUMENTS

Airborne 5

Automatic Flight Control 5A

Electrical Circuit 5M

Engine and Temperature 5E

Flight 5F

Flight, Associated 5FA

Guidance and Control System 11G14

Liquid-Level, Quantity, and Flow

Measuring 5L

Navigation 5N

Position and Pressure 5P

Vehicle, Construction, and Material-

Handling Component 36Y13

INTEGRATORS

Bombing System 11B80

INTERCONNECTING ASSEMBLIES

Guidance and Control 11G41

Hydraulic System, Aircraft and

Missile 9H26

Missile, Ground Operational 31XA2

INTERCONNECTING GROUPS

Bombing System 11B22

INTERCOOLERS (HEAT EXCHANGERS)

Air-Conditioning and Pressurizing 15A4

INTERPRETATION EQUIPMENT

Photographic 10H9

INTERVALOMETERS

Photographic 10A6-13

INVERTERS

Electric Power Supply 35C1-6

Navigation Instrument 5N26

ISOLATORS

Fire Control System 11F91

Navigation Instrument 5N21

JACK-HAMMERS

Construction 36C36

JACKPADS

Maintenance and Inspection 35A5

JACKS

Component 35AA2

Inspection and Maintenance 35A2

Vehicle, Construction, and Material-

Handling Component 36Y57

JEEPS

Vehicle 36A5

JET ENGINES

Aircraft 2J

Jet Engine, Associated 2JA

JETTISONING

Aircraft Stores 11A18

JOINT ASSEMBLIES

Ice Eliminating 15E8

Pneumatic System 9P8

Universal 16G4

JOINTERS

Wood Cutting, Shop Machinery 34C4-2

JUNCTION BOXES

Alternating-Current 8A24-3

Automatic Flight Control 5A4-3

Bombing System 11B5-3

Combination AC/DC 8C19-3

Electric Power Supply 35CA1-3

Navigation Instrument 5N17-2

Supercharger Control 2RA5-6

KETTLES

Construction 36C11

KITS

Adapter, Photographic 10G17

Aerial Delivery 13C7

Aircraft Ground Support 35G5

Emergency, Survival 14S1

Explosive 11P19

Fire Control System 11F25

Interconnecting, Missile Operational 31XA2

Loading and Servicing 35D26

Manifold, Loading and Servicing 35D16

Special Tool 32A20

Survival, Oxygen-System 15X11

Training Component 43X42

Unloading, Aerial-Delivery 13C10

Vehicle, Construction, and Material-

Handling Component 36Y17

LABORATORIES

Photographic 10M
 Photographic Kit..... 10G5

LADDERS

Inspection and Maintenance, Aircraft 35A3

LAMP CHANGERS

Lighting and Electrical..... 35F4

LANDING CRAFT

Cargo Boat..... 39C

LANDING GEARS

Aircraft 4A
 Landing Gear, Associated 4AA

LANDING JACKS

Vehicle, Construction, and Material-
 Handling..... 36Y57

LANDING MATS

Air and Missile Base Utility
 Operating 35E2

LANTERNS

Air Field Lighting and Electrical 35F5-6

LAPPING MACHINES

Metal Finishing, Shop Machinery 34F2-5

LATCHING ASSEMBLIES

Airborne Mechanical..... 16L1

LATHES

Shop Machinery 34C2-4

LAUNCH CONTROL AND CHECKOUT

Simulator and Training Device 43D16

LAUNCH CONTROL AND COUNTDOWN

Ground Electronic, Missile
 Operational 31X3

LAUNCHERS

Aerial Delivery, Rocket 13C7-32
 Grenade 11W3-9
 Launch Site Trainer 43D32
 Training..... 43E16

LAUNCHERS AND EQUIPMENT

Airborne..... 11L1
 Armament..... 11L
 Armament, Associated..... 11LA
 Control 11L3
 Ground..... 11L2
 Missile Support 35M3
 Missile Support, Associated 35MA3
 Shelter, High- and Low-Helium 35EA5

LAUNDRY AND DRY CLEANING EQUIPMENT

Special Service 50D

LAWN MOWERS

Mowing 47C1

LEAD AND CABLE ASSEMBLIES

Egress System..... 11P17
 Ignition, Turbojet and Turboprop..... 8E1-7

LEADING EDGE ASSEMBLIES (WING)

Structural Component, Airframe..... 16W32

LEATHER

Cordage, Leather and Misc Fabric 42F
 Cutting Machine, Shop Support 34C1

LENS

Airborne Camera 10A2-3

LEVELING TOOLS

Special Tool 32A12

LIFTS

Loading and Servicing..... 35D5
 Material-Handling 36M2

LIGHT ASSEMBLIES

Airborne Camera 10A12
 Ground Camera 10B4
 Photographic Processing 10E18
 Training Component..... 43X34

LIGHT TABLES

Photographic Processing 10E30

LIGHTING AND ELECTRICAL EQUIPMENT,
GROUND-HANDLING

Air Field 35F

LIGHTING EQUIPMENT

Alternating- and Direct-Current 8C10
 Alternating-Current..... 8A10
 Direct-Current..... 8D10
 Special Electronic, Airborne..... 12S3
 Survival 14S10
 Vehicle 36Y18

LIGHTING KITS

Photographic 10G6

LIMITERS

Aircraft and Missile Engine Fuel
 System..... 6J21

LINE ASSEMBLIES

Brake System..... 4BA7

LINERS

Structural Component, Airframe..... 16W36

LINKAGE ASSEMBLIES

Air-Conditioning and Pressurizing..... 15A10
 Automatic Flight Control System..... 5A33

LINKING MACHINES

Shop Support..... 34Y36

LINKS, CONNECTING

Airframe Structural Component 16W39

LIQUID OXYGEN	
Fuel, Lubricant, Oxygen or Gas	42B6
Training	43E21
LIQUID OXYGEN SERVICES	
Missile Support	35M7-3
Propellant Storage and Handling	37C2-4
LOAD ASSEMBLIES	
Automatic Test	51T8
LOAD TANK ASSEMBLIES	
Training Component	43X27
LOADERS	
Aircraft	35D30-3
Bucket, Aerial-Delivery	13C7-31
Construction	36C12
Loading and Servicing	35D30
Missile	35D30-2
Munitions	35D30-4
LOADING EQUIPMENT	
Training	43E18
Vehicle Onloading	36Y59
LOADING AND SERVICING EQUIPMENT	
Dock	35D9
Loading and Servicing, Associated	35DA
Ground Handling, Support, and Air Base Operating	35D
LOCKING AND LATCHING MECHANISMS	
Airborne Mechanical	16L
LOCK AND RELEASE ASSEMBLIES	
Ground Handling and Weighing	35B1
Missile Support	35M26
LOCOMOTIVES	
Railroad	45A2
Railroad, Associated	45AA
LOGIC CARDS	
Flight Instrument, Associated	5FA4
LUBRICATING EQUIPMENT	
Shop Support	34Y17
LUBRICATING SYSTEM	
Jet Engine	7J
Reciprocating Engine	7R
LUBRICANTS	
Fuel, Lubricant, Oxygen, and Gas	42B
LUMBER	
General	42L
MACHINES	
Duplicating	46D1
Hose Assembly	34Y30
Office	46A1
Photographic Processing	10E5
Thawing	34Y39
Universal Valving	34Y12
MAGAZINES	
Photographic Instrumentation	10L2
MAGNET EQUIPMENT	
Special Electronic, Airborne	12S4
MAGNETIZERS	
Shop Support	34Y27
MAGNETOS	
Engine Component, Nonaeronautical	38X9
Ignition, Reciprocating-Engine	8E2-5
MAIN BLADES	
Rotor Assembly	3R1-2
MAIN HUB	
Rotor Assembly	3R1-6
MAINTENANCE AND INSPECTION EQUIPMENT AIRCRAFT AND MISSILE	
Ground Handling, Support, Air and Missile Base Operating	35A
MAINTENANCE MANAGEMENT SYSTEMS	
General Technical Order	00-20
Inspection and Age Control of USAF Equipment	00-20K
Office	00-20F
Railroad	00-20D
Vehicle	00-20B
MAINTENANCE TRAINERS	
Avionic Intermediate Shop	43D33
MANIFOLD ASSEMBLIES	
Fire Control System	11F88
Hydraulic System, Aircraft or Missile	9H18
Missile Support	35M30
MANIFOLDS	
Aircraft and Missile Engine Fuel System	6J28
Egress System	11P18
Loading and Servicing	35D16
Oxygen System	15X15
MARINE ENGINES	
Diesel, Nonaeronautical	38M1
MARKERS	
Armament	11A10
MARKING MACHINES	
Wire, Shop Support	34Y10
MASKS	
Oxygen	15X5
Personal, Gas	14P4
MAST ASSEMBLIES	
Rotor Assembly	3R19

MASTER HARDWARE	
Automatic Test.....	51T
MATERIAL-HANDLING EQUIPMENT	
Crane	36M1
Lift	36M2
Material-Handling, Associated	36MA
Positioner (Pallet)	36M6
Tractor	36M3
Trailer	36M4
Truck.....	36M5
Wheelbarrow	36M7
MATRIX ASSEMBLIES	
Bombing System	11B96
MEASURING EQUIPMENT	
Checkout, Missile.....	31X2-28
Distance, Automatic-Flight-Control	5A47
Inertial, Navigation-Instrument.....	5N16-3
Missile Support	35M20
Motion Picture Camera Machine.....	10C4
Training Component.....	43X7
MECHANICAL EQUIPMENT, AIRBORNE	
Actuating Mechanism.....	16A
Airborne Mechanical, Associated.....	16GA
Airframe Component	16W
Control Mechanism.....	16C
Gear Box, Drive and Screwjack Assembly	16G
Locking and Latching Mechanism	16L
Regulating Mechanism.....	16R
Release Mechanism	16K
MECHANISMS	
Fire Control System	11F72
Hydraulic System, Aircraft.....	9H28
Photographic Processing	10E20
Training Component.....	43X21
MEDICAL SUPPLIES	
Aerial Delivery	13C7-34
MEMORY DEVICES	
Automatic Test.....	51T9
Fire Control System	11F76
METAL	
Cutting Machine, Shop Support	34C2
METAL TREATMENT	
Chemical.....	42C2
METALS, PLASTICS AND COMPOSITION MATERIALS	
Plastic	42D4
METEOROLOGICAL-ELECTRONIC EQUIPMENT	
Airborne.....	12M
Airborne Auxiliary	12M1
Ground.....	31M
Ground Auxiliary	
METERS	
Aircraft Oxygen System.....	15X20
Automatic Test.....	51T10
Checkout, Missile.....	31X2-28
Electric Circuit Instrument.....	5M1
Exposure, Ground-Camera.....	10B2
Fire Control System	11F82
Liquid-Level, Quantity, and Flow Measuring Instrument	5L20
Loading and Servicing.....	35DA12
Missile Support	35M20
Photographic Processing	10E27
Radiological Detecting.....	11H4-7
Training Component.....	43X7
Vehicle, Construction, and Material- Handling Component	36Y20
MICROFILM EQUIPMENT	
Photographic	10F
MICROSCOPES	
Optical Instrument	49A13
MICROWAVE RELAYS	
Radio Electronic.....	31R5
MILLING MACHINES	
Foundry, Shop Support	34Y38
Metal Cutting, Shop Machinery	34C2-5
MINES	
Aerial, Non-Clustered.....	11A5
Hazard Detecting.....	11H3
MIRROR ASSEMBLIES	
Bombing System	11B58
MISCELLANEOUS TECHNICAL ORDERS	
General	00-25
MISSILE OPERATIONAL-ELECTRONIC EQUIPMENT	
Ground.....	31X
Missile Ground Operational, Associated	31XA
MISSILE SPACERS	
Structural Component, Airframe.....	16W21
MISSILE SUPPORT EQUIPMENT	
Erection and Launch	35M
Missile- and Component-Handling.....	35M4
Stands.....	35A4
Thermocouples	35M40
MISSILE SYSTEMS, FIGHTER	
Fire Control System	11F66
MISSILES	
Aerial Delivery	13C7-22
Airborne Offensive System	12S9
Cruise.....	21M

Drone, Airborne Radio-Electronic.....	12R7	Alternating-Current.....	8A1
Guided	21M	Bombing System	11B75
Training Device.....	43D	Booster and Rocket.....	2K
Training Device Component	43X	Direct-Current.....	8D1
Training Equipment	43E	Drive or Gear	35CA11
MIXER DISTRIBUTORS		Egress System.....	11P9
Photographic Processing	10E15	Electric, Lighting and Electrical, Ground, Handling.....	35F15
MIXERS		Electric, Shop Support.....	34Y19
Aerial Delivery Kit	13C7-33	Fire Control System	11F29
Construction.....	36C14	Hydraulic.....	35CA15
Fire Control System	11F27	Hydraulic System, Aircraft or Missile	9H10
Photographic Kit.....	10G7	In-Flight Feeding.....	13B8
Photographic Processing	10E11	Missile Operational	31XA6
Vehicle	36C14	Missile Support.....	35M18
MODULE ASSEMBLIES		Pneumatic System, Aircraft or Missile.....	9P12
Guidance and Control System	11G33	Vehicle	36Y19
MODULATOR ASSEMBLIES		MOUNTINGS	
Hydraulic System, Aircraft or Missile	9H12	Bombing System	11B25
MODULATORS		Engine.....	2RA3
Automatic Flight Control System.....	5A27	Fire Control System	11F31
Bombing System	11B24	MOUNTS	
Checkout, Missile.....	31X2-61	Airborne Weapon	11W1-15
Fire Control System	11F28	Automatic Flight Control System.....	5A20
Hydraulic System, Aircraft or Missile	9H12	Bombing System	11B26
MODULES		Bridge Calibrator	5L8-2
Electric.....	8D27	Camera	10A3
Flight Instrument.....	5F29	Camera Base.....	10A6-4
Guidance and Control System	11G33	Engine, Structural Component.....	16W19
Training Component.....	43X50	Fire Control System	11F31
MONITORS		Ground Weapon	11W2-8
Automatic Test.....	51T11	Launcher.....	11L4
Checkout, Missile.....	31X2-20	Optical	49A2
Electric Power Supply	35CA29	MOUNTS OR RACKS	
Flight Instrument.....	5F21	Electric Power Supply	35CA18
Launch Control and Countdown, Missile	31X3-12	Liquid-Level, Quantity, and Flow Measuring Instrument	5L8
Navigation Instrument.....	5N34	MOWING EQUIPMENT	
Power, Alternating-Current.....	8A27	Lawn and Turf.....	47C
Training Component.....	43X46	Vehicle, Construction, and Material- Handling Component	36Y21
MORTARS		MULTIMETERS	
Explosive	11C11	Bombing System	11B56
Weapon	11WA1-4	MULTIPLEXERS	
MORTUARY EQUIPMENT		Flight Instrument.....	5F27
General	00-80F	Launch Control and Countdown, Missile	31X3-23
MOTOR AND DRIVE ASSEMBLIES		MUNITIONS	
Servo Mechanism, Automatic- Flight-Control	5A15-3	Armament.....	11A
MOTORCYCLES		Cluster	11A9
Vehicle	36A6	Ground.....	11A8
MOTORS (ALSO SEE ACTUATORS AND MOTORS)		Riot Control and Smoke	11A14
Alternating- and Direct-Current	8C1	NAVIGATION EQUIPMENT	
		Automatic Flight Control Instrument.....	5N

Celestial, Guidance and Control.....	11G19	OIL PURIFIERS	
Compass.....	49C1	Fuel- and Oil-Handling	37A15
Indicator	49C2	OILS	
Photographic	10A8	Fuel, Lubricant, Oxygen or Gas	42B2
Training Component.....	43X29	OPTICAL INSTRUMENTS, TIMEKEEPING, AND NAVIGATION EQUIPMENT	
Training Device.....	43D6	Navigation	49C
NAVIGATION RADAR-ELECTRONIC EQUIPMENT		Optical	49A
Airborne.....	12P5	Timekeeping.....	49B
Ground.....	31P5	OPTICAL-MECHANICAL ELECTRONIC	
NAVIGATION RADIO-ELECTRONIC EQUIPMENT		Guidance and Control System, Armament	11G4
Airborne.....	12R5	OPTICS GROUP	
Ground.....	31R4	Bombing System	11B69
NEGATIVE KITS		Fiber Optic	31S11
Photographic	10G8	Photographic Kit.....	10G15
NETWORKS		ORDNANCE EQUIPMENT	
Bombing System	11B51	Vehicle, Construction, and Material- Handling.....	36R
Bombing System, Camera.....	11B90	OSCILLATORS	
Liquid-Level, Quantity, and Flow Measuring Instrument	5L15	Automatic Test.....	51T12
NIGHT VISION EQUIPMENT		Electrical Power Supply	35CA27
Special Airborne Electronic.....	12S10	Fire Control System	11F52
NITROGEN SERVICE		Guidance and Control System	11G36
Missile Support	35M7-2	OUTPUT SIGNAL DISTRIBUTION UNITS	
NOSE ASSEMBLIES		Navigation Instrument.....	5N16-4
Structural Component, Airframe.....	16W40	OUTSIDE PLANT, WIRE-FIXED ELECTRONIC EQUIPMENT	
NOZZLE ASSEMBLIES		Ground.....	31W3
Air Refueling System.....	6A5	OVENS	
Rocket Engine Fuel System.....	6K10	Food Service	41B1-7
NOZZLES		Food Warming, In-Flight Feeding.....	13B1
Aircraft or Missile Engine Fuel System	6J8	Welding and Heat Treating, Shop Machinery	34W2
Booster and Rocket Power Plant	2KA1-10	OVER-THE-HORIZON	
Fuel- and Oil-Handling	37A6	Ground Radar-Electronics.....	31P9
Fuel Injection	6R4	OXYGEN SYSTEMS AND EQUIPMENT	
Rocket Engine Fuel System.....	6K10	Aircraft.....	15X
Utility Operating	35EA1	PACKAGES	
NUCLEAR APPLICATIONS, MONITORING, HANDLING, DISPOSAL AND DECONTAMINATION		Bombing System	11B85
General	00-110N	Refrigeration	15A3-3
OFFENSIVE SYSTEMS		PACKAGING EQUIPMENT	
Airborne Missile.....	12S9	Shop Support.....	34Y11
Aircraft and Missile Fuel System	6S	PAINT SPRAY EQUIPMENT	
OFFICE, DUPLICATING, PRINTING, AND BINDING EQUIPMENT		Shop Support.....	34Y4
General	00-20F	PAINTS	
Office	46	Dope, Paint, or Cleaning Compound.....	42A2
OIL COOLERS		PALLETS AND PALLET ASSEMBLIES	
Electric Power Supply	35CA16	Air Cargo Loading and Servicing	35D33-2

Material-Handling	36M6-2	PERSONNEL ACCESS SYSTEMS	
Training Component.....	43X59	Missile Support	35M1-9
PANEL ASSEMBLIES		PERSONNEL EJECTION SYSTEMS	
Auxiliary Power Unit	8E3-3	Egress System or Explosive Device.....	11P
Propeller, Hydraulic	3HA12	PERSONNEL RELIEF FACILITIES	
Structural Component, Airframe.....	16W7	Aircraft Furnishing	13A2
PANELS		PEST CONTROL EQUIPMENT	
Aircraft Fire Detection and		Agriculture	47D
Extinguishing.....	13F9	PHOTO FLASH EQUIPMENT	
Alternating-Current.....	8A25	Cartridge Ejector	10A7-3
Automatic Flight Control System.....	5A13	PHOTO LABORATORIES	
Bombing System	11B61	Mobile	10M1
Checkout, Missile.....	31X2-4	PHOTOGRAMMETRY EQUIPMENT	
Combination AC/DC	8C21	Interpretation and Photogrammetry.....	10H
Control, Lighting and Electrical,		PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	
Ground, Handling.....	35F2	Airborne Camera	10A
Control, Oxygen-System.....	15X10	Automatic Test.....	51T29
Direct-Current.....	8D24	Ground Camera	10B
Electric Power Supply	35CA6	Heater or Chiller.....	10E4
Fire Control System	11F32	Interpretation and Photogrammetry.....	10H
Generation and Distribution.....	31X4-3	Kit	10G
Guidance and Control System	11G18	Microfilm.....	10F
Launch Control and Countdown,		Motion Picture Camera	10C
Missile	31X3-8	Night Photo	10A7
Liquid-Level, Quantity, and Flow		Photocopy.....	10E7
Measuring Instrument	5L7	Photographic Instrumentation.....	10L
Navigation Instrument.....	5N14	Photographic Interpreter	10H2
Propellant, Missile Support	35M11	Photographic Laboratory.....	10M
Propeller, Electric	3EA14	Photometer	10A13
Training Component.....	43X31	Processing.....	10E
Training Equipment	43E5	Projection.....	10D
PAPER		Radar Assessing.....	10K
Cutting Machine, Shop Support	34C3	Sensitized Material.....	10J
PARACHUTES		PICK-UP ASSEMBLIES	
Aerial Delivery	13C5	Refrigeration	15A5-5
Automatic Release	14D2	PIN ASSEMBLIES	
Cargo Discharger	13C6	Structural Component, Airframe.....	16W22
Deceleration Device	14D1	PIPE LAYERS	
Recovery	14D3	Construction.....	36C16
PASSENGER CARS		PISTOLS	
Vehicle	36A7	Ground Weapon	11W3-3
PATCHBOARDS		PLANTS	
Training Device.....	43DA10	Construction.....	36C17
PAVERS AND FINISHERS		PLASTICS	
Construction.....	36C15	Metal, Plastic and Composition	
PERISCOPES		Material.....	42D4
Bombing System	11B62	PLATFORMS	
PERSONAL EQUIPMENT		Automatic Flight Control System.....	5A42
Armor.....	14P6	Bombing System	11B66
Bags	14P1	Guidance and Control System	11G10
Blankets.....	14P2		
Clothing	14P3		
Mask, Gas.....	14P4		
Respirators	14P5		

Loading and Servicing.....	35D34
Missile.....	35A4-4
Navigation Instrument.....	5N24
Rocket Launcher.....	13C7-22
PLOTTERS	
Interpretation and Photogrammetry.....	10H3
Training Component.....	43X39
PLOTTING BOARDS	
Fire Control System.....	11F100
Radar Assessing.....	10K2
PLOTTING TABLES	
Interpretation and Photogrammetry.....	10H4
PLOWS	
Construction.....	36C18
PLUGS	
Electric Power Supply.....	35CA22
PLUMBING EQUIPMENT	
Commercial.....	40P
PLUMBING FIXTURES	
Aircraft Furnishing.....	13A20
PNEUMATIC SYSTEMS AND EQUIPMENT	
Aircraft and Missile.....	9P
PODS	
Airborne Camera.....	10A17
Armament, Airborne.....	11W1-31
Structural Component, Airframe.....	16W41
POINTERS	
Fire Control System.....	11F60
Optical.....	10D2
POSITION AND PRESSURE INSTRUMENTS	
Indicator.....	5P3
POSITIONERS	
Aircraft Landing Gear.....	4A6
Material Handling.....	36M6
POTENTIOMETERS	
Automatic Flight Control System.....	5A30
Fire Control System.....	11F56
Liquid-Level, Quantity, and Flow Measuring Instrument.....	5L12-5
POWER CONTROLS	
Linkage Assembly, Automatic Flight Control.....	5A33-2
Vehicle, Construction, and Material- Handling Component.....	36Y22
POWER DISTRIBUTION EQUIPMENT	
Ground Electronic, Missile- Operational.....	31X4
POWER MONITORS	
Alternating-Current.....	8A27

POWER PACKS	
Hydraulic, Aircraft and Missile.....	9H7
POWER PLANTS	
Booster and Rocket.....	2KA1
Gas Turbine, Auxiliary.....	2JA5
Jet Engine, Associated.....	2JA6
Reciprocating Engine, Auxiliary.....	2RA7
Rotor Control.....	3R2-4
POWER SUPPLIES	
Alternating- and Direct-Current.....	8C11
Alternating-Current (See 8A11).....	8A2
Automatic Flight Control System.....	5A21
Automatic Test.....	51T13
Bombing System.....	11B28
Checkout, Missile.....	31X2-11
Direct-Current.....	8D11
Electric, Aircraft or Missile.....	35C
Fire Control System.....	11F33
Flight Instrument.....	5FA3
Ground Guidance, Missile.....	31X7-5
Guidance System.....	11G9
Launch Control and Countdown, Missile.....	31X3-13
Launcher, Armament.....	11LA7
Navigation Instrument.....	5N16-2
Training Component.....	43X41
Training Equipment.....	43E6-3
Versatile Automatic Test.....	51V7
POWER SUPPLIES, ELECTRICAL, GROUND, HANDLING	
Generators.....	35C2
Power Supply, Associated.....	35CA
Power Supply System.....	35C1
Rectifier.....	35C3
Training Component.....	43X41
Training Equipment.....	43E6-3
POWER SYSTEMS	
Training.....	43E6
POWER TRAINS	
Vehicle, Construction, and Material- Handling.....	36Y23
POWER UNITS	
Auxiliary, Reciprocating Engine.....	8E3
Engine and Temperature Instrument.....	5E16
Ground Communications, Missile.....	31X1-11
Hydraulic System, Aircraft and Missile.....	9H7
Liquid-Level, Quantity, and Flow Measuring Instrument.....	5L14-2
Training Component.....	43X28
Weapon, Associated.....	11WA3
POWERED GROUND EQUIPMENT ENGINES	
Nonaeronautical.....	38G

PREFABRICATED BUILDINGS		
Utility Operating	35E3	
PREHEATERS		
Airborne Reciprocating Engine	2RA8	
PREPARATION EQUIPMENT		
Food Service	41B4	
PRESERVERS		
Life, Survival	14S2	
PRESSES		
Drill, Metal-Cutting, Shop Machinery	34C2-3	
Dry Mounting, Photographic	10E6	
Metal Forming, Shop Machinery	34G1-5	
Punch, Metal-Cutting, Shop Machinery	34C2-7	
Shop Support	34Y32	
Tire Repair, Shop Support	34Y9-5	
PRESSURE RATIO SYSTEMS		
Position and Pressure Instrument	5P6	
PRESSURE REDUCING VALVES		
Photographic Processing	10E33	
PRESSURETROLS		
Supercharger Control	2RA5-9	
PRESSURIZING AND AIR-CONDITIONING EQUIPMENT		
Aircraft and Missile	15A	
PRESSURIZING UNITS		
Missile Support	35M9	
PRIMER AND IGNITER ASSEMBLIES		
Aircraft and Missile Engine Fuel Systems	6J9	
Aircraft Reciprocating Engine Fuel System	6R10	
PRIMING ASSEMBLIES		
Loading and Servicing	35D28	
PRINTERS		
Automatic Test	51T14	
Photographic Kit	10G10	
Photographic Processing	10E8	
Training Component	43X47	
PROBE ASSEMBLIES		
Fire Detector System, Aircraft	13F13	
PROBES		
Air Refueling System	6A18	
Flight Instrument	5F13	
Rocket Engine Fuel System	6K13	
PROCESSORS		
Automatic Flight Control System	5A46	
Engine or Temperature Instrument	5E18	
Fire Control System	11F101	
Navigation instrument	5N31	
Photographic	10E	
PROGRAMMERS		
Fire Control System	11F97	
Guidance and Control System	11G21	
Launch Control and Countdown, Missile	31X3-11	
PROJECTION EQUIPMENT		
Photographic	10D	
PROJECTORS		
Interpretation and Photogrammetry	10H8	
Motion Picture	10D1-2	
Stereoscopic	10D1-4	
Still Picture	10D1-3	
Training, Associated	43DA13-3	
Training Component	43X58	
Training Equipment	43E25	
PROPELLANT PRESSURIZATION		
Fuel, Lubricant, Oxygen or Gas	42B7-3	
Missile Support, Associated	35MA4	
PROPELLANT SERVICING UNITS		
Missile Support	35M7	
PROPELLANT STORAGE AND HANDLING SYSTEMS		
Propellant Storage and Handling, Associated	37CA	
Storage and Handling	37C	
PROPELLANT UTILIZATION SYSTEMS		
Missile Support	35M1-3	
PROPELLANTS		
High-Energy Liquid	42B7	
PROPELLERS AND ROTORS		
Aircraft	3	
Automatic, Variable-Pitch	3M2	
Constant Speed	3H3	
Controllable Pitch	3M1	
Electrically Controlled	3E	
Fixed Pitch	3M3	
Hydraulically Controlled	3H	
Hydraulically Controlled, Associated	3HA	
Hydromatic	3H1	
Mechanically Controlled	3M	
Mechanically Controlled, Associated	3MA	
Rotor Assembly	3R	
Ventilating, Commercial	40V2-5	
PROTECTION EQUIPMENT		
Utility Operating	35E26	
PROTECTIVE PACKAGING AND PRESERVATION PACKAGING		
General Technical Order	00-85	
Specific Technical Order	00-85A	
Transportation Packaging Order	00-85B	

PROTECTORS	
Bombing System	11B50
PROTRACTORS	
Special Tool	32A15
PRY-BAR ASSEMBLIES	
Aircraft and Missile Handling.....	35B10
PUBLIC DISPLAY PROCEDURES	
General	00-80G
PULLERS	
Special Tool (See 32A23)	32A31
Standard Tool.....	32B9
PULSE ASSEMBLIES	
Checkout, Missile.....	31X2-67
PUMPING UNITS	
Hydraulic, Missile Support	35M2-3
PUMPS	
Air-Conditioning and Pressurizing.....	15A9
Air Refueling System.....	6A10
Air, Shop Support	34Y5-4
Aircraft and Missile Engine Fuel	
System	6J10
Anti-Icing.....	3HA5-2
Construction	36C19
Electrical Power Supply	35CA8
Engine Component, Nonaeronautical	38X11
Feathering, Hydraulic Propeller.....	3HA5-3
Fire Control System	11F34
Fuel- and Oil-Handling	37A7
Fuel and Water.....	6J10
Fuel and Water, Aircraft Reciprocating	
Engine Fuel System	6R5
Fuel, Engine Component,	
Nonaeronautical	38X11-2
Hand, Shop Support	34Y5-6
Heating, Cabin.....	15H2
Hydraulic, Aircraft and Missile.....	9H4
Ice Eliminating	15E1
In-Flight Feeding.....	13B8
Integral Oil Control.....	3HA5-4
Jet Engine Lubricating	7J4
Lubricating, Shop Support.....	34Y17-5
Lubricating System, Reciprocating	
Engine	7R4
Missile Operational	31XA9
Missile Support	35M19
Oil, Shop Support	34Y5-5
Plumbing	40P2
Pneumatic, Aircraft and Missile	9P4-2
Power Plant, Associated.....	2JA6-2
Propellant Storage and Handling.....	37C5
Propeller, Hydraulic	3HA5
Shop Support.....	34Y5
Survival	14S11
Training Component.....	43X17
Utility Operating	35E13
Vacuum, Shop Support (See 34Y5)	34Y16
Vacuum System	9V2
Vehicle, Construction, and Material-	
Handling Component	36Y25
PUNCH PRESSES	
Metal Cutting, Shop Machinery	34C2-7
PURGING AND CLEANING EQUIPMENT	
Propellant Storage and Handling.....	37C9
Utility Operating	35E22
PURGING SYSTEM	
Aircraft and Missile Engine Fuel	
System.....	6P
Pump.....	6P4
PURIFICATION EQUIPMENT	
Oil Purifier	37A15
Water Treating.....	40W4
PYLONS	
Structural Component, Airframe.....	16W6
Turbojet and Turboprop Aircraft and	
Engine Fuel System	6J14-3
PYROTECHNICS	
Airborne Weapon	11W1-16
Ground Weapon	11W2-9
QUADRANTS	
Optical Instrument	49A3
RACKS	
Automatic Flight Control System.....	5A20
Bombing System	11B29
Fire Control System	11F55
Guidance and Control System	11G17
Liquid-Level, Quantity, and Flow	
Measuring Instrument	5L8
Mounting, Alternating-Current	8A4-2
Rocket	11LA6
Structural Component, Airframe.....	16W26
RADAR ASSEMBLIES	
Bombing System	11B30
Photographic	10K
RADAR-ELECTRONIC EQUIPMENT	
Airborne.....	12P
Airborne, Auxiliary	12P1
Ground	31P
Ground, Auxiliary	31P1
RADAR EQUIPMENT	
Automatic Test.....	51P
Training Device.....	43D7
Training Equipment	43E7
RADAR SETS	
Bombing System	11B31
Fire Control System	11F35

RADIATORS		
Engine, Nonaeronautical.....	38X12	
Hydraulic System	9H14	
Rotor Assembly	3R18	
Vehicle, Construction, and Material- Handling Component	36Y26	
RADIO-ELECTRONIC EQUIPMENT		
Airborne.....	12R	
Airborne, Auxiliary	12R1	
Communications, Ground.....	31R2	
Ground, Auxiliary	31R1	
RADIO EQUIPMENT		
Automatic Test.....	51R	
Training Device.....	43D7	
Training Equipment	43E7	
RADIO SETS		
Aerial Delivery	13C7-14	
Bombing System	11B32	
RADOME ASSEMBLIES		
Structural Component, Airframe.....	16W5	
RAFTS		
Life, Survival.....	14S3	
RAIL ASSEMBLIES		
Loading and Servicing.....	35DA5	
Structural Component, Airframe.....	16W15	
RAILROAD AND ASSOCIATED EQUIPMENT		
Bridge	45E2	
Cars.....	45A1	
Cranes.....	45E4	
General	00-20D	
Locomotive.....	45A2	
Railroad, Associated	45AA	
Right-of-Way and Maintenance	45E	
Rolling Stock	45A	
Signal Device.....	45E7	
RAILS		
Ejection Seat Guide Rail and Track Assembly	13A8	
RAMPS		
Loading and Servicing.....	35D27	
RANGE FINDERS		
Optical Instrument	49A16	
RANGES		
Food Service	41B3-6	
RATIO UNITS		
Liquid-Level, Quantity, and Flow Measuring	5L14-8	
REACTORS		
Fire Control System	11F18	
READERS		
Microfilm	10F3	
Training	43E9	
READOUT UNITS		
Training Component.....	43X48	
RECEIVERS AND TRANSMITTERS		
Bombing System	11B34	
Fire Control System	11F36	
Guidance and Control System	11G26	
RECEIVERS		
Bombing System	11B33	
Checkout, Missile.....	31X2-19	
Fire Control System	11F69	
RECEPTACLE ASSEMBLIES		
Air Refueling System.....	6A6	
Aircraft Fire Detection and Extinguishing.....	13F8	
Bombing System	11B35	
Fire Control System	11F8	
RECHARGING UNITS		
Missile Support	35M8	
RECIPROCATING ENGINES		
Airborne.....	2R	
Reciprocating Engine, Associated.....	2RA	
RECOILS		
Air Refueling System.....	6A12	
RECONNAISSANCE DEVICES		
Airborne Camera	10A9	
RECORDER GROUPS		
Launch Control and Countdown, Missile	31X3-15	
RECORDERS		
Bombing System	11B36	
Checkout, Missile.....	31X2-57	
Engine and Temperature Instrument.....	5E11	
Photographic, Fire-Control.....	11F86	
Training Component.....	43X16	
Training Equipment	43E8	
RECORDERS AND TAPE UNITS		
Flight Instrument	5F23	
Motion Picture Sound.....	10C6	
RECORDING, SPECIAL-ELECTRONIC EQUIPMENT		
Airborne.....	12S5	
Ground.....	31S3	
RECOVERY EQUIPMENT		
Aircraft	13D	
Silver (Photographic Processing)	10E31	
RECTIFIERS		
Checkout, Missile.....	31X2-29	
Electric Power Supply	35C3	
Photographic Interpretation	10H7	
Photographic Processing	10E28	

Power Supply, Electrical, Ground, Handling.....	35C3
Transformer, Alternating-Current	8A14
Transformer, AC/DC.....	8C14
Transformer, Direct-Current	8D14
REEL BRACKETS	
Photographic	10H10
REELING MACHINES	
Cable-Laying Construction	36C13-3
Hydraulic System, Aircraft and Missile	9H22
REELS	
Airborne Camera	10A2-5
Aircraft Seat Locking.....	13A4
Aerial Delivery	13C11
Fuel- and Oil-Handling	37A19
Hose	6A8
Inertial, Ejection-System.....	11P14
Special Tool.....	32A41
Tire Repair	34Y9-9
REFACING TOOLS	
Standard Tool.....	32B18
REFRIGERATING EQUIPMENT	
Commercial	40R7
In-Flight Feeding	13B5
REFRIGERATION AND PRESSURIZATION UNITS	
Air-Conditioning and Pressurization	15A3
REFUELING SYSTEMS, AERIAL	
Aircraft and Missile	6A
REFUELING UNITS	
Fuel- and Oil-Handling	37A11
REGULATING MECHANISMS	
Airborne Mechanical.....	16R
REGULATORS	
Air and Missile Base Utility Operating	35E23
Air-Conditioning and Pressurizing.....	15A1
Air Field Lighting and Electrical	35F8
Airborne Mechanical.....	16R1
Aircraft Reciprocating Engine Fuel System.....	6R6
Bombing System	11B37
Checkout, Missile.....	31X2-26
Current and Voltage, Nonaeronautical Engine	38X21
Fire Control System	11F37
Fire Detector System, Aircraft.....	13F12
Fuel and water.....	6J11
Guidance System	11G25
Hydraulic System, Aircraft and Missile	9H17
Jet Engine Lubricating System.....	7J5

Liquid-Level, Quantity, and Flow Measuring Instrument	5L19
Loading and Servicing.....	35DA14
Lubricating System, Reciprocating	
Engine	7R5
Missile Support	35M13
Oxygen Flow, Oxygen System	15X6
Pneumatic System	9P10
Rocket Engine Fuel System.....	6K6
Supercharger Control System.....	2RA5-4
Training	43E20
Turbojet and Turboprop Aircraft and	
Engine Fuel System	6J11
Utility Operating	35E23
Voltage, Alternating- and Direct- Current.....	8C18
Voltage, Alternating-Current.....	8A16
Voltage, Direct-Current.....	8D16
Voltage, Electric Power Supply	35C1-5
Welding and Heat Treating Shop	
Machinery	34W8
RELAY ASSEMBLIES	
Bombing System	11B54
Fire Control System	11F51
Launcher.....	11LA12
RELAY BOXES	
Bombing System	11B5-5
RELAY MICROWAVE-ELECTRONIC EQUIPMENT	
Ground.....	31R5
RELAYS	
Air Field Lighting and Electrical	35F9
Checkout, Missile.....	31X2-30
Countdown	31X3-6
Electric Component	8R
Electric Power Supply	35CA10
Generator.....	8R1
Liquid-Level, Quantity, and Flow	
Measuring Instrument	5L9
Meter.....	8R10
Multiple Application	8R3
Panel, Associated	8RA1
Pneumatic System, Aircraft and	
Missile	9P13
Propeller, Electric	3EA9
Radar	8R7
Radio Electronic, Airborne	12R6
Rotary and Selector	8R8
Starter	8R4
Transfer	8R9
RELEASE MECHANISMS	
Airborne Mechanical.....	16K
Bombing System	11B81
RELEASES	
Bombing System	11B38

Harness.....	11P20	RIPPERS AND PAVING BREAKERS	
RELOAD FACILITIES		Construction.....	36C36
Utility Operating	35E33	RIVETERS	
REMOVERS		Standard Tool.....	32B5
Egress System, Personnel-Ejection	11P4	RIVETING MACHINES	
REPRODUCERS		Shop Support.....	34Y6
Checkout, Missile.....	31X2-58	ROCKET SYSTEMS	
Photographic Processing	10E23	Aerial Delivery.....	13C7-12
Training.....	43E8	ROCKETS AND ROCKET COMPONENTS	
RESCUE AND SURVIVAL		Aerial Delivery Kit	13C7-22
Seat, Survival.....	14S6	Aerospace.....	22R
RESERVOIRS		Munition	11A11
Hydraulic Brake, Landing-Gear	4BA3	ROLLERS	
Hydraulic System, Aircraft and		Construction.....	36C20
Missile	9H5	Road, Aerial-Delivery Kit.....	13C7-26
Ice Eliminating	15E6	Special Tool	32A24
Pneumatic System, Aircraft and		ROLLING STOCK	
Missile	9P14	Railroad	45A
RESET ASSEMBLIES		ROLLS	
Checkout, Missile.....	31X2-68	Metal Forming, Shop Machinery.....	34G1-6
RESISTORS		ROOTERS	
Airborne Electrical System, AC/DC	8C16	Construction.....	36C21
RESOLVERS		ROTOR ASSEMBLIES AND EQUIPMENT	
Airborne Electronic.....	12A2	Propeller, Rotor.....	3R
Fire Control System	11F71	ROUTERS	
RESPIRATORS		Shop Machinery	34C4-5
Personal.....	14P5	RUBBER MATERIALS	
RESTRICTORS		Aircraft Hose.....	42E1
Hydraulic System	9H3	Seal and Packing	42E2
RETARDATION SYSTEMS		SAFES AND LOCKERS	
Cargo, Parachute, or Weapon	11A17	Office	46A3
RETRACTORS		SAFETY SHELTERS	
Egress System.....	11P10	Utility Operating	35EA3
REVERSER ASSEMBLIES		SAMPLES	
Structural Component, Airframe.....	16W24	Test, Radioactive, Radiological	
REVOLVERS		Detecting.....	11H4-8
Ground Weapon	11W3-4	SANDERS	
REWIND EQUIPMENT		Shop Machinery	34F3-3
Motion Picture Camera	10C5	Standard Tool.....	32B10
RIFLES		SANITATION EQUIPMENT	
Ground Weapon	11W3-5	Utility Operating	35E35
RIGHT-OF-WAY EQUIPMENT		SAWS	
Railroad	45E	Metal Cutting, Shop Machinery	34C2-8
RINGS		Standard Tool.....	32B13
Loading and Servicing.....	35D32	Vehicle, Construction, and Material-	
RIOT CONTROL AIDS		Handling Component	36Y27
Munitions	11A19	Wood Cutting, Shop Machinery.....	34C4-6

SCALES	
Handling and Weighing	35B3
SCANNERS	
Bombing System	11B93
SCHEDULER	
Air Data	5A6-4
SCISSORS	
Rotor Assembly	3R20
SCOOTERS	
Vehicle	36A8
SCORERS	
Photographic, Motion Picture Camera	10C10
Training	43E7-7
SCRAPERS	
Aerial Delivery Kit	13C7-27
Construction	36C22
SCREENS	
Photographic Projection	10D3
SCREWDRIVERS	
Standard Tool	32B11
SCREWJACK ASSEMBLIES	
Airborne Mechanical	16G3
Airborne Mechanical, Associated	16GA3
SEALANT EQUIPMENT	
Shop Support	34Y31
SEALERS	
Wrapping and Packaging, Shop Support	34Y11-4
SEALS	
Fire Control System	11F95
Rubber	42E2
Structural Component, Airframe	16W23
SEARCH AND HEIGHT FINDING RADAR-ELECTRONIC EQUIPMENT	
Airborne	12P6
Ground	31P6
SEARCHLIGHTS	
Air Field Lighting and Electrical	35F5-7
SEATS	
Aircraft Furnishing	13A
SELECTORS	
Air Refueling System	6A19
Bombing System	11B39
Boost, Supercharger-Control	2RA5-10
Checkout, Missile	31X2-15
Fire Control System	11F87
Navigation Instruments	5N25
SEMICONDUCTOR DEVICE SETS	
Checkout, Missile	31X2-77
SEMITRAILERS	
Vehicle	36A9
SENSING UNITS	
Liquid-Level, Quantity, and Flow Measuring Instrument	5L14-7
Air Conditioning and Pressurizing	15A5
SENSITIZED MATERIALS AND SUPPLIES	
Photographic	10J
SENSORS	
Aircraft Furnishing	13A21
Automatic Flight Control System	5A22
Direct-Current	8D21
Flight Instrument	5F25
Jet Engine Lubricating System	7J14
Position and Pressure Instrument	5P10
Temperature Sensing Device	15A5-6
SEPARATORS	
Air-Conditioning and Pressurizing	15A7
Fuel- and Oil-Handling	37A8
Hydraulic System, Aircraft and Missile	9H20
Ice Eliminating	15E4
Lubricating System, Reciprocating Engine	7R6
Water, Shop Support	34Y18
SEQUENCE SELECTORS	
Egress System	11P22
SERVICERS	
Missile Support	35M5
SERVICING UNITS	
Aircraft and Missile Engine Fuel System	6J12
Aircraft Fire Detection and Extinguishing	13F14
Fuel- and Oil-Handling	37A17
Ground Handling, Support, Air, and Missile Base Operating	35D
Missile Support	35M5
Propellant	35M7
SERVO ASSEMBLIES	
Rotor	3R3
SERVO MECHANISMS	
Automatic Flight Control System	5A15
SERVOMOTORS	
Training Component	43X33
SERVOS	
Automatic Flight Control System	5A14
Fire Control System	11F38
Guidance and Control System	11G27
Training Component	43X30

SETS		
Bombing System, Armament	11B23	
Display	5N29	
SETTING DEVICES		
Training Component	43X18	
SEVERANCE SYSTEMS		
Egress System	11P21	
SEWING MACHINES		
Shop Support	34Y7	
SEXTANTS AND MOUNTS		
Navigation Instrument	5N10	
SHACKLE ASSEMBLIES		
Bombing System	11B40	
Structural Component, Airframe	16W8	
SHAFTS		
Airborne Mechanical	16G5	
Engine and Temperature Instrument	5E7	
Engine Component, Nonaeronautic	38X18	
Rotor	3R12	
SHAKER ASSEMBLIES		
Flight Instrument	5F19	
SHAPERS		
Shop Machinery	34C2-9	
SHARPENERS		
Metal Finishing, Shop Machinery	34F2-4	
Special Tools	32A7	
SHEARS		
Metal Cutting, Shop Machinery	34C2-10	
SHELTERS		
Utility Operating	35E4	
SHIELDS		
Control, Brake-System	4BA9	
SHIPPING EQUIPMENT		
Missile, Utility-Operating	35E25	
SHOCK ABSORBERS		
Missile Support	35M3-3	
Vehicle, Construction, and Material- Handling Component	36Y29	
SHOP MACHINERY AND SHOP SUPPORT EQUIPMENT		
Cutting Machine	34C	
Finishing Machine	34F	
Forming Machine	34G	
Shop Support	34Y	
Welding and Heat Treating	34W	
SHOPS		
Missiles A and M, Utility Operating	35E15	
SHOTGUNS		
Ground Weapon	11W3-6	
SHOVELS		
Construction	36C23	
SHOWER UNITS		
Plumbing	40P1	
SHREDDERS		
Paper Cutting, Shop Machinery	34C3-2	
SIFTERS		
Food Service	41B1-8	
SIGHTING STATIONS		
Fire Control System	11F40	
SIGHTS		
Bombing System	11B41	
Fire Control System	11F39	
Ground Weapon	11W2-13	
Navigation Instrument	5N32	
SIGNAL CONDITIONERS		
Guidance and Control System	11G35	
SIGNAL DEVICES		
Armament (See flares)	11A10	
Railroad	45E7	
SIGNAL SOURCE ASSEMBLIES		
Checkout, Missile	31X2-41	
SILVER RECOVERY UNITS		
Photographic Processing	10E31	
SIMULATED COHERENT RADIATION DEVICES		
Ground Special-Electronic	31S10	
SIMULATORS		
Air and Missile Base Utility Operating	35D24	
Armament	11A10	
Checkout, Missile	31X2-24	
Fire Control System	11F41	
Flight, Training Device	43D3	
Liquid-Level, Quantity, and Flow Measuring Instrument	5L10	
Photographic Processing	10E22	
Radio and Radar Training Device	43D7	
Training Device, Associated	43DA	
Training Equipment	43E10	
SINKS		
Photographic Kit	10G11	
Photographic Processing	10E9	
SIRENS		
Airfield Lighting and Electrical	35F10	
SITE TECHNICAL ORDERS		
Ground Defense System	31Z2	
SKETCHMASTER		
Interpretation and Photogrammetry	10H5	

SKI		General Technical Order	00-80
Aircraft Landing Gear.....	4A2	Joint Service ID	00-80H
SKIDS		Mortuary.....	00-80F
Handling and Weighing	35B8	Public Display	00-80G
SKYANCHORS		Shipping Export	00-80A
Survival Equipment.....	14S9	SPECIAL TOOLS	
SLIDE ASSEMBLIES		Special Tool	32A
Aircraft Furnishing	13A19	SPECIAL WEAPONS, DEFENSE AND	
SLINGS		NUCLEAR APPLICATIONS, MONITORING,	
Bombing System	11B77	HANDLING, DISPOSAL, AND	
Loading and Servicing.....	35D6	DECONTAMINATION	
SLIP RING ASSEMBLIES		Atomic and Radiological Warfare	00-110A
Rotor	3R6	General Technical Order	00-110
SMALL ARMS		Nuclear Applications, Monitoring,	
Ground Weapon	11W3	Handling, Disposal, and	
SMOKE DETECTORS		Decontamination.....	00-110N
Aircraft Fire Detector System	13F2	SPECTROPHOTOMETERS	
SMOKE POTS		Optical Instrument	49A17
Chemical Warfare	11C13	SPEED REDUCERS	
SOCKET ASSEMBLIES		Electric Power Supply	35CA19
Jet Engine Lubrication System	7J8	Missile Support	35M31
Reciprocating Engine Lubricating		Propeller, Electric	3EA8
System.....	7R9	Utility Operating	35EA2
SOLDERING EQUIPMENT		SPEED SETTING ASSEMBLIES	
Soldering Iron	34W7	Propeller, Electric	3EA12
Soldering Pot.....	34W3	SPINNERS	
SOLENOIDS		Propeller, Hydraulic	3HA6
Airborne Electrical System		SPLICERS	
(See relays).....	8R	Motion Picture Camera	10C7
Fire Detector System, Aircraft	13F11	Special Tools.....	32A3
Direct-Current.....	8D17	SPRAYERS	
SOUND RECORDING EQUIPMENT		Paint, Shop Support	34Y4-3
Photographic, Motion-Picture	10C6	Weed and Pest Control.....	47D1
SPACE VEHICLES		SPREADERS	
Recovery	13D1	Construction.....	36C24
SPARK PLUGS		Loading and Servicing.....	35D21
Engine Component, Nonaeronautical	38X13	Special Tool	32A34
Ignition, Reciprocating-Engine	8E2-6	SPRINGS	
SPECIAL COMMUNICATIONS PROJECTS		Strut.....	4SA8
Ground Defense System	31Z4	Vehicle, Construction and Material-	
SPECIAL-ELECTRONIC EQUIPMENT		Handling Component	36Y30
Airborne.....	12S	SQUIBS AND BLASTING CAPS	
Airborne, Auxiliary	12S1	Armament.....	11P5
Ground.....	31S	STABILIZATION SYSTEMS	
Ground, Auxiliary	31S1	Automatic Flight Control	5A1-4
SPECIAL SERVICES EQUIPMENT		STABILIZERS	
Laundry	50D	Aircraft Furnishing	13A17
SPECIAL TECHNICAL ORDERS		Automatic Flight Control System.....	5A16
Aircraft Crash Procedure.....	00-80C	Bombing System	11B42
		Electric Power Supply	35CA26
		Ground Guidance, Missile.....	31X7-52

Navigation Instrument.....	5N13	STENCIL MACHINES	
STACKERS, FORK-LIFT		Office	46D1
Material-Handling, Associated	36MA1	STITCHERS	
STAIRCASES		Wrapping and Packaging, Shop	
Inspection and Maintenance	35A3	Support.....	34Y11-5
STAMPING MACHINES		STOP ASSEMBLIES	
Metal Forming, Shop Machinery	34G1-12	Automatic Flight Control System.....	5A31
STANDARDS		Hydraulic, Aircraft or Missile	9H15
AFCS Engineering-Installation	31Z-10	STORAGE AND TRANSFER	
STANDS		Carbon Dioxide, Gas, Shop Support.....	34Y14-2
Component	35AA4	Fuel- and Oil-Handling	37A
Ground Camera	10B6	Gas, Shop Support	34Y14
Inspection and Maintenance	35A4	Oxygen.....	34Y14-3
Shop Support.....	34Y26	STORAGE FACILITIES	
Training Component.....	43X22	Propellant Storage and Handling.....	37C2
STAPLERS		STORAGE UNITS, FOOD	
Shop Support.....	34Y29	In-Flight Feeding	13B2
STARTERS		STOVES	
Air Field Lighting and Electrical	35F16	Food Service	41B3-7
Alternating-Current.....	8A12	STRAIGHTENERS	
Direct-Current.....	8D12	Photographic Processing	10E10
Electrical Power Supply	35CA20	STRAINERS AND FILTERS	
Engine Component, Nonaeronautical	38X14	Missile Support.....	35M15
Hydraulic System, Aircraft or Missile	9H21	Reciprocating Aircraft and Engine	
Turbine and Propulsion.....	2JA3	Fuel System	6R2
STARTING EQUIPMENT		Turbojet and Turboprop Aircraft and	
Aircraft, Explosive.....	11A18	Engine Fuel System	6J5
Jet Engine, Associated	2JA3	STRAP ASSEMBLIES	
Loading and Servicing.....	35D12	Aircraft Furnishing	13A18
STATIONS		STRUCTURAL COMPONENTS (AIRFRAME)	
Launcher, Armament	11LA9	Airborne Mechanical.....	16W
STATIONS, CONNECTING		STRUTS, SHOCK ABSORBING	
Communications, Missile	31X1-4	Aircraft Landing Gear.....	4S
Launcher, Associated.....	11LA9	Associated.....	4SA
STATIONS, METEOROLOGICAL-ELECTRONIC		Rotor Assembly	3R14
EQUIPMENT		SUBMACHINE GUN	
Ground.....	31M3	Ground Weapon	11W3-7
STATIONS, TEST		SUBSISTENCE AND FOOD SERVICE	
Automatic	51	EQUIPMENT	
STATORS		Food Service	41B
Ignition, Turbojet and Turboprop.....	8E1-10	Subsistence.....	41A
Rotor Assembly	3R11	SUMMATORS	
STEERING BARS		Liquid-Level, Quantity, and Flow	
Handling and Weighing	35B4	Measuring Instrument	5L11
STEERING GEARS		SUPERCHARGERS	
Vehicle, Construction and Material-		Air-Conditioning and Pressurizing.....	15A11
Handling.....	36Y60	Control System.....	2RA5
STEERING UNITS		Supercharger.....	2RA6
Strut.....	4SA2	Turbo and Engine Driven	2RA4

SUPPORT ASSEMBLIES

Aircraft Ground Support..... 35G3
 Structural Component, Airframe..... 16W12

SUPPORT EQUIPMENT

Missile Launching..... 35M3-8

SUPPRESSOR ASSEMBLIES

Air Refueling System..... 6A14
 Alternating-Current..... 8A17
 Fire Control System 11F53

SURFACERS

Wood Finishing, Shop Machinery..... 34F3-4

SURVEILLANCE

Ground Radar-Electronic 31P7

SURVIVAL EQUIPMENT

Aircraft Oxygen System Kit 15X11
 Survival 14S

SWAGERS

Special Tool 32A16

SWEEPERS

Construction..... 36C25

SWITCHES

Air Pressure 2RA5-14
 Airborne Electrical System 8S
 Aircraft Oxygen System..... 15X16
 Automatic Flight Control 5A17
 Bombing System 11B73
 Engine Component, Nonaeronautic..... 38X23
 Fire Control System 11F81
 Flight Instrument 5F9
 Guidance and Control System..... 11G16
 Lighting and Electrical, Ground,
 Handling..... 35F14
 Liquid-Level, Quantity, and Flow
 Measuring Instrument 5L12
 Missile Ground Operational,
 Associated 31XA5
 Missile Support 35M29
 Propeller, Hydraulic 3HA9
 Utility Operating 35E32

SWITCHING UNITS

Checkout, Missile..... 31X2-35
 Launch Control and Countdown,
 Missile 31X3-16
 Launcher..... 11LA13

SWIVEL AND GIMBAL ASSEMBLIES

Missile Support 35M38

SYNCHRONIZERS

Automatic Flight Control System..... 5A38
 Bombing System 11B43
 Electronic, Airborne..... 12A1
 Fire Control System 11F42

Launch Control and Countdown,

 Missile 31X3-18
 Propeller, Electric 3EA10
 Propeller, Hydraulic 3HA7

SYNCHROSCOPES

Engine and Temperature Instrument..... 5E8

SYSTEM TECHNICAL ORDERS, GROUND

DEFENSE

Facility 31Z3
 Site 31Z2
 Special Communications Project 31Z4

SYSTEMS

All Weather Landing..... 51N4
 Ground Defense 31Z1
 Ground Guidance 31X7
 Liquid Measuring 5L1
 Missile Support 35M1
 Navigation Instrument..... 5N1
 Training Component..... 43X56

TABLES

Aircraft Furnishing 13A23
 Film Plotting..... 10H4
 Firing, Weapon..... 11WA1
 Launcher..... 11LA1
 Light, Photographic-Processing 10E30

TAIL BLADES

Rotor Assembly 3R1-3

TAIL ROTOR

Rotor Assembly 3R1-5

TAMPERS

Railroad Maintenance 45E13
 Special Tool..... 32A9

TANK ASSEMBLIES

Structural Component, Airframe..... 16W34
 Training Component..... 43X27

TANKS

Aircraft and Missile Engine Fuel
 System 6J14
 Aircraft Reciprocating Engine Fuel
 System 6R8
 Chemical Warfare 11C15
 Fire Control System 11F93
 Fuel- and Oil-Handling 37A12
 Jet Engine Lubricating System 7J10
 Liquid-Level, Quantity, and Flow
 Measuring Instruments 5L14-3
 Shop Support..... 34Y8
 Vehicle, Construction, and Material-
 Handling Component 36Y31
 Water, Aerial Delivery 13C7-17

TAPES AND TAPE COMPONENTS

Training Component..... 43X54
 Transport, Training Component..... 43X45

TAPEWRITERS

Airborne Special Electronic.....12S8

TARGET ASSEMBLIES

Special Tool.....32A22

TARGET DETECTING DEVICES

Guidance and Control System.....11G43

TARGETS

Drone, Armament.....11A22

Training.....43E11

TECHNICAL ORDERS, GENERAL

Administrative.....00-35

Air Evacuation.....00-75

Air Installation.....00-105

Aircraft Crash Procedures.....00-80C

Atomic and Radiological Warfare,
Nuclear Applications, Monitoring,
Handling, Disposal, and

Decontamination.....00-110A

Blank Forms.....00-35D

Electrical Facility.....00-105A

Export.....00-80AA

Fire Protection and Rescue.....00-105E

Harvest Eagle.....00-105K

Inspection and Age Control of USAF

Equipment.....00-20K

Maintenance Management.....00-20

Miscellaneous TOs.....00-25

Mortuary Equipment.....00-80F

Office Equipment.....00-20F

Nuclear Applications, Monitoring,
Handling, Disposal, and

Decontamination.....00-110N

Protection Packing and Preservation

Packing.....00-85

Public Display Procedures.....00-80G

Quality Control.....00-100

Railroad Equipment.....00-20D

Special Technical Orders.....00-80

Special Weapons, Defense and
Nuclear Applications, Monitoring,
Handling, Disposal, and

Decontamination.....00-110

Specific Equipment.....00-85A

Supply.....00-35A

Technical Order System.....00-5

Transportation Packaging Order.....00-85B

Vehicles.....00-20B

TECHNICAL ORDER INDEXES

Alphabetical.....0-2

Cross-Reference Table.....0-4

Technical Order Index.....0-1

TECHNICAL PUBLICATIONS SYSTEMS

General Technical Order.....00-5

TELEGRAPHIC EQUIPMENT

Training.....43E19

TELEMETERING

Meteorological-Electronic.....31M7

TELEMETERING, SPECIAL-ELECTRONIC
EQUIPMENT

Airborne.....12S7

Ground.....31S7

TELEPHONE SETS

Communication Equipment, Missile.....31X1-8

TELESCOPES

Bombing System.....11B57

Optical Instrument.....49A4

TELETYPE, WIRE FIXED-ELECTRONIC
EQUIPMENT

Ground.....31W4

TELEVISION SPECIAL-ELECTRONIC
EQUIPMENT

Airborne.....12S6

Ground.....31S4

TELEVISION SYSTEMS

Fire Control System.....11F75

Special Electronic.....31S4

TEMPERATURE AND HUMIDITY
METEOROLOGICAL-ELECTRONIC
EQUIPMENT

Airborne.....12M3

Ground.....31M4

TEMPERATURE CONTROL EQUIPMENT

Missile.....15M

Photographic Kit.....10G12

Regulators, In-Flight Feeding.....13B3

TEMPERATURE INDICATORS

Air-Conditioning, Aircraft and Missile.....15A20

TEMPERATURE SENSING
DEVICES

Aircraft Air-Conditioning and

Pressurizing.....15A5

TEMPLATES

Photographic Interpretation.....10H6

Special Tool.....32A19

TENSION DEVICES

Missile Support.....35M34

TENTS

Utility Operating.....35E5

TEST EQUIPMENT

Aircraft and Miscellaneous Ground

Support.....33D1

Aircraft Accessory.....33D2

Analytical or Leak Detector.....33C1

Armament.....	33D5
Automatic	51
Automatic Flight Control System.....	33D3
Automotive	33D6
Calibration.....	33K
Chemical Inspection	33B1
Electrical and Electronic, General Purpose.....	33A1
Electrical and Electronic, Special Purpose.....	33D7
Electrical Inspection	33B2
Electronic Inspection	33B3
Engine, Aircraft	33D4
Engine, Nonaeronautic.....	33A10
Flight Simulator	33D13
Gas	33A7
General Purpose	33A
General Purpose, Associated.....	33AA
Guided Missile	33D9
Hydraulic	33A2
Inspection	33B
Inspection, Shop.....	33B7
Inspection, Stand	33B5
Laboratory	33C
Laboratory Fixture	33C4
Light or Lamp.....	33B8
Liquid.....	33A6
Measurement	33C2
Mechanical	33A3
Optical Inspection.....	33B4
Photographic	33D10
Physiological.....	33D11
Pneumatic.....	33A4
Solid	33A8
Special Purpose.....	33D
Special Purpose, Associated.....	33DA
Temperature Test	33C3
Time	33A9
Training Device.....	33D12
Vacuum.....	33A5
X-Ray	33B6
TEST SETS	
Armament or Fire Control System.....	33D5
TEST TOOLS	
Special Tool	32A25
THEODOLITES	
Optical Instrument	49A8
THERMISTORS	
Air Refueling System.....	6A22
THERMOCOUPLES	
Engine and Temperature Instrument.....	5E10
Ignition System, Turbojet and Turboprop.....	8E1-12
Missile Support Equipment	35M40

THERMOSTATS	
Cabin Heating.....	15H6
Engine and Temperature Instrument.....	5E13
Engine Component, Nonaeronautical	38X15
Jet Engine Lubricating System.....	7J7
Reciprocating Engine Lubricating System.....	7R7
Temperature Sensing	15A5-4
Training Component.....	43X11
THREADERS	
Metal Cutting, Shop Machinery	34C2-12
THROTTLES	
Engine and Temperature Instrument.....	5E14
Jet Engine	2JA8
THRUST REVERSER ASSEMBLIES	
Structural Component, Airframe.....	16W24
THRUSTERS	
Egress System, Personnel Ejection	11P6
TIEDOWN DEVICES	
Aerial Delivery System and Cargo Loading.....	13C
TIMEKEEPING EQUIPMENT	
Clock, Timer, Watch	49B
TIMEPIECES	
Navigation Instrument.....	5N11
TIMERS	
Bombing System	11B44
Egress System.....	11P3
Ground Guidance, Missile.....	31X7-45
Guidance and Control System.....	11G28
Ignition, Turbojet and Turboprop.....	8E1-4
Photographic Processing	10E12
Propeller, Electric	3EA11
Propeller, Hydraulic	3HA8
Timekeeping	49B3
Training Component.....	43X8
TIRE REPAIR EQUIPMENT	
Inflation Unit.....	15A19
Shop Support.....	34Y9
TIRES AND TUBES	
Aircraft	4T
Vehicle, Construction, and Material- Handling Component	36Y32
TOOLS	
Ammo Reel Loading	11W1-26
Launcher Rotation.....	11LA14
Service	32A38
Simulator and Training Device	43DA6
Special.....	32A
Standard	32B

TOTALIZER ASSEMBLIES		
Liquid-Level, Quantity, and Flow		
Measuring Instrument	5L14-5	
TOW TARGETS		
Training	43E17	
TOWBARS		
Handling and Weighing	35B5	
TOWERS		
Utility Operating	35E34	
TRACKS		
Aircraft Landing Gear.....	4A3	
TRACK KEEPER		
Flight Instrument	5F16	
TRACKERS		
Astro	5N15-2	
Navigation Instrument.....	5N15	
TRACKING, ELECTRONIC		
OPTICAL		
Photographic	10B8	
TRACKING SETS		
Fire Control System	11F99	
TRACTORS		
Aerial Delivery Kit	13C7-6	
Construction.....	36C26	
Material-Handling	36M3	
Vehicle	36A10	
TRAILERS (SEE TRUCKS AND DOLLIES)		
Aerial Delivery	13C7-2	
Construction.....	36C27	
Loading and Servicing.....	35D3	
Loading and Servicing, Associated.....	35DA3	
Material-Handling	36M4	
Vehicle	36A11	
TRAINING AIDS		
High Altitude Helmet and Suit	43D8-4	
TRAINING COMPONENTS, DEVICES, AND EQUIPMENT		
Attachment.....	43X20	
Bombing System Trainer	43E29	
Component	43X	
Device	43D	
Device, Associated.....	43DA	
Equipment	43E	
Gunship System Trainer.....	43E30	
Mobile Trainer	43E24	
Resident Trainer	43E23	
TRAINING SETS		
Radio and Radar	43E7-5	
TRANSDUCERS		
Automatic Flight Control System.....	5A23	
Bombing System	11B64	
Brake System.....	4BA11	
Electric Power Supply	35CA25	
Fire Control System	11F57	
Flight Instrument.....	5F12	
Guidance and Control System.....	11G38	
Jet Engine Lubricating System.....	7J13	
Oxygen System	15X9	
Position and Pressure Instrument	5P4	
TRANSFER UNITS		
Carbon Dioxide, Gas Transfer and		
Storage	34Y14-2	
Fuel- and Oil-Handling	37A13	
Gas Transfer and Storage	34Y14	
TRANSFORMERS		
Aircraft and Missile Hydraulic		
System.....	9H24	
Alternating- and Direct-Current	8C14	
Alternating-Current.....	8A19	
Automatic Flight Control	5A45	
Bombing System	11B45	
Fire Control System	11F44	
TRANSITS		
Optical Instrument	49A5	
TRANSLATORS		
Photographic Processing	10E25	
Training Component.....	43X51	
TRANSMISSIONS		
Hydraulic System, Aircraft or Missile	9H6	
Missile Support	35M32	
Rotor	3R7	
Vehicle, Construction, and Material-		
Handling Component	36Y33	
TRANSMITTERS		
Air Refueling System.....	6A11	
Airborne Electrical System, AC.....	8A22	
Automatic Flight Control	5A18	
Bombing System	11B46	
Egress System.....	11P13	
Engine and Temperature Instrument.....	5E12	
Fire Control System	11F45	
Flight Instrument	5F10	
Guidance and Control System.....	11G26	
Liquid-Level, Quantity, and Flow		
Measuring Instrument	5L13	
Navigation Instrument.....	5N12	
Oxygen System	15X14	
Position and Pressure Instrument	5P5	
Receiver, Bombing System.....	11B34	
Receiver, Fire Control	11F36	
Transponders	12P4-4	
TRANSPORTATION		
Packaging Order, General.....	00-85B	
TRANSPORTERS		
Aerial Delivery Kit	13C7-38	

Cable Laying, Construction	36C13-4	Training Component.....	43X38
TRIPODS		Switching, Checkout, Missile.....	31X2-35
Ground Camera	10B5	Zeroing, Checkout, Missile.....	31X2-66
Motion Picture Camera	10C8	UNLOADING KITS	
TRUCK TRACTOR		Cargo Loading, Tiedown, and Aerial	
Vehicle	36A13	Delivery	13C10
TRUCKS (ALSO SEE DOLLIES AND TRAILERS)		UTILITY OPERATING EQUIPMENT	
Aerial Delivery Kit	13C7-2	Airbase Operating.....	35E
Loading and Servicing.....	35D3	VACUUM SYSTEMS AND EQUIPMENT	
Loading and Servicing, Associated.....	35DA3	Aircraft and Missile	9V
Material-Handling	36M5	VALVES	
Vehicle	36A12	Air Brake.....	4BA5
TUBES		Air-Conditioning and Pressurizing.....	15A2
Flight Instrument	5F11	Air Refueling System.....	6A9
Missile Support.....	35M36	Aircraft Common Hardware	44H1-3
Structural Component, Airframe.....	16W29	Aircraft Furnishing	13A13
Vehicle, Construction, and Material-		Aircraft Reciprocating Engine Fuel	
Handling Component	36Y32	System.....	6R9
TUNERS		Automatic Flight Control System.....	5A26
Fire Control System	11F70	Brake Deboost.....	4BA6
TURBINES		Control, Airborne Weapon	11W1-21
Refrigerating and Pressurizing.....	15A3-2	Electrical Power Supply	35CA12
TURBINE STARTERS AND PROPULSION		Engine Component, Nonaeronautic.....	38X16
STARTING DEVICES		Fire Control System	11F68
Jet Engine	2JA3	Fire Detection, Aircraft.....	13F7
TURBOCHARGERS		Fuel- and Oil-Handling	37A
Electric Power Supply	35C4	Fuel and water, Fuel System.....	6J15
Electric Power Supply, Associated	35CA23	Heating, Cabin	15H5
Engine Component, Nonaeronautical	38X26	Hydraulic Brake Control.....	4BA4
TURNTABLES		Hydraulic Nose Wheel Steering	4SA3
Handling and Weighing	35B6	Hydraulic System, Aircraft or Missile	9H8
TURRETS		Ice Eliminating	15E2
Fire Control System	11F46	Jet Engine	2JA10
TYING MACHINES		Jet Engine Lubricating System.....	7J6
Wrapping and Packaging, Shop		Loading and Servicing.....	35DA8
Support.....	34Y11-6	Lubricating System, Reciprocating	
TYPEWRITERS		Engine	7R8
Office	46A4	Missile Operational	31XA4
UNITS		Missile Support.....	35M14
Adapter, Checkout, Missile.....	31X2-56	Missile Temperature Control.....	15M2
Automatic Flight Control System.....	5A32	Offensive System	6S2
Bombing System	11B47	Oxygen System	15X8
Cable, Checkout, Missile.....	31X2-36	Photographic Processing	10E35
Digital, Checkout, Missile	31X2-32	Pneumatic, Strut.....	4SA7
Fire Control System	11F47	Pneumatic System, Aircraft or Missile.....	9P5
Flash Ground Camera.....	10B3	Pressure Reducing (Photographic	
Flight Instrument	5F22	Processing)	10E33
Guidance and Control System.....	11G22	Purging System.....	6P1
Liquid-Level, Quantity, and Flow		Rocket Engine Fuel System.....	6K1
Measuring	5L14	Shop Support.....	34Y20
Navigation Instrument.....	5N16	Supercharger, Barometric Anti-Leak.....	2RA5-12
		Supercharger Control System.....	2RA5-11
		Training Component.....	43X14
		Turbojet and Turboprop Aircraft and	
		Engine Fuel System	6J15
		Vacuum, Aircraft or Missile	9V1

VANS	
Shop Support.....	34Y25
VAPORIZORS	
Missile Support.....	35M39
VECTOGRAPH	
Photographic Kit.....	10G14
VEHICLE ENGINES	
Gasoline, Nonaeronautical.....	38V2
VEHICLES, CONSTRUCTION, AND MATERIAL- HANDLING EQUIPMENT AND COMPONENTS	
Component	36Y
Construction.....	36C
Gas Generating.....	36G
General	00-20B
Material-Handling	36M
Material-Handling, Associated	36MA
Ordnance	36R
Vehicle	36A
Warhead Transport	36A11
VENTILATING EQUIPMENT, COMMERCIAL	
Blower.....	40V1
Fan.....	40V2
VENTILATORS	
Aircraft and Missile Pneumatic System.....	9P15
Aircraft Oxygen System.....	15X21
Commercial	40V3
Utility Operating	35E12
VESSELS	
Watercraft.....	39V
VIBRATION ISOLATORS	
Engine Mounting System.....	2RA3-3
VIBRATORS	
Alternating-Current.....	8A9
Automatic Flight Control System.....	5A19
Construction.....	36C34
Ignition, Reciprocating-Engine	8E2-8
Instrument Panel, DC	8D9
Special Tools.....	32A11
VIDEO SYSTEMS	
Motion Picture Camera	10C14
VIEWERS	
Ground Camera	10B7
Motion Picture Camera	10C3
Projector	10D4
VIEWFINDERS	
Photographic	10A4
VISICORDERS	
Training.....	43E9
VISORS	
Bombing System	11B48
Fire Control System	11F48
VISUAL SYSTEMS	
Night, Special Airborne Electronic.....	12S10
Training, Associated.....	43DA13
VOLTAGE AND CURRENT EQUIPMENT	
Training Component.....	43X53
Versatile Automatic Test	51V8
VULCANIZERS	
Tire Repair, Shop Support	34Y9-3
WAGONS	
Construction.....	36C28
WARNING DEVICES	
Alternating- and Direct-Current	8C15
Alternating-Current.....	8A15
Direct-Current.....	8D15
WASHERS	
Photographic Processing	10E13
WASTE GATE MOTORS	
Supercharger Control	2RA5-8
WATCHES	
Timekeeping.....	49B2
WATER COOLERS	
In-Flight Feeding	13B7
WATER PURIFICATION EQUIPMENT	
Aerial Delivery Kit	13C7-7
WATER SUPPLIES	
Photographic Kit.....	10G13
WATER TREATING EQUIPMENT	
Commercial	40W
Separator (Filter).....	34Y18
WATERCRAFT AND ASSOCIATED EQUIPMENT	
Cargo Boat.....	39C
Personnel Boat.....	39P
Range Patrol Boat	39R
Tugboat.....	39TG
Vessel.....	39V
WAVEGUIDE	
Bombing System	11B84
Fire Control System	11F49
WEAPONS AND EQUIPMENT	
Aerial Delivery Kit	13C7
Air Launched Guided Glide Weapon.....	11K1
Airborne.....	11W1
Atomic, Aerial Delivery	13C7-47
Chemical.....	11C
Ground.....	11W2
Guided, Glide weapon	11K

Small Arms.....	11W3	Fire Control System	11F65
Weapon, Associated	11WA	Ground	31M5
WEAPON SIMULATORS			
Training	43D11	WIND INDICATORS	
WEED AND PEST CONTROL EQUIPMENT			
Agriculture	47D	Air Field Lighting and Electrical	
WEIGHING EQUIPMENT			
Handling and Weighing	35B2	WIND TUNNELS	
WEIGHT AND BALANCE EQUIPMENT			
Cargo Loading, Tiedown, and Aerial		Training	
Delivery	13C12	WINDLASSES	
WELDING AND HEAT TREATING EQUIPMENT			
Shop Machinery	34W	Training	
WHEEL ASSEMBLIES, AXLES, AND BRAKE ASSEMBLIES			
Vehicle, Construction, and Material-		WINDOWS	
Handling.....	36Y3	Utility Operating	
WHEELBARROWS			
Material Handling	36M7	WINDSHIELD WIPERS	
Hydraulic System, Aircraft or Missile			
WHEELS			
Aircraft Landing Gear.....	4W	WIRE, FIXED-ELECTRONIC EQUIPMENT	
Vehicle, Construction, and Material-		Ground	
Handling Component	36Y34	WIRE MARKING MACHINES	
WINCHES			
Loading and Servicing		Shop Support.....	
(Also see 35D4)	35D7	
Vehicles, Construction, and Material-		WOOD	
Handling Component	36Y35	Cutting Machine, Shop.....	
WIND DIRECTION AND VELOCITY, METEOROLOGICAL-ELECTRONIC EQUIPMENT			
Airborne	12M4	
WRAPPING AND PACKAGING EQUIPMENT			
Shop Support.....			
Wrapping Tool.....			
WRENCHES			
Special Tool			
Standard Tool.....			
WRINGERS			
Photographic Processing			
YAW DAMPER SYSTEMS			
Automatic Flight Control			
ZEROING UNITS			
Checkout, Missile.....			